mace

DVR Manual Version 10
(Beta)

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CHAPTER 1

Chapter 1 - Initial Setup

1.1 - Box Contents

Included in the accessory box of your DVR will be the following items:

User Manual

Software CD

Power Cable

USB Mouse

Network Cable

IR Remote Control

Mounting Brackets

PTZ Decoder*

Audio Dongle

Video Loop Out Dongle**

*400RT2, 800RT2 and 56MR models only
**RT3 models only

1.2 - Operating Conditions

Working Temperature 50˚ - 131˚ F
Working Relative Humidity 10% - 90%

Using a UPS (Uninterruptible Power Supply) with surge and battery backup is strongly recommended for DVRs and all associated devices (routers, modems, etc.)

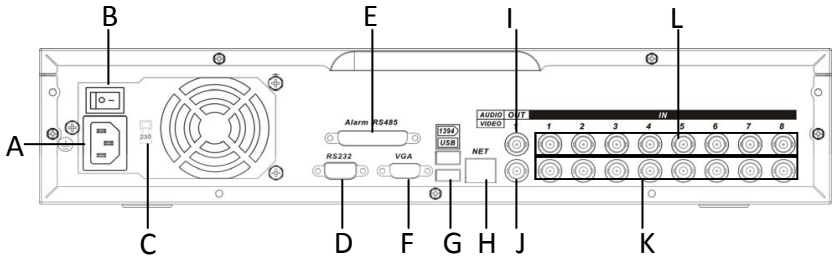
- Avoid extreme heat
- Avoid direct sunlight
- Avoid excessive humidity
- Maintain horizontal mounting
- Avoid excessive vibrations
- Do not place other devices on top of the DVR
- Operate in a well ventilated place
- Do not block the cooling fan

Before Powering Up

- Make sure the orange tab on the power supply is set to 115V
- Plug power supply into a reliable 110VAC power source

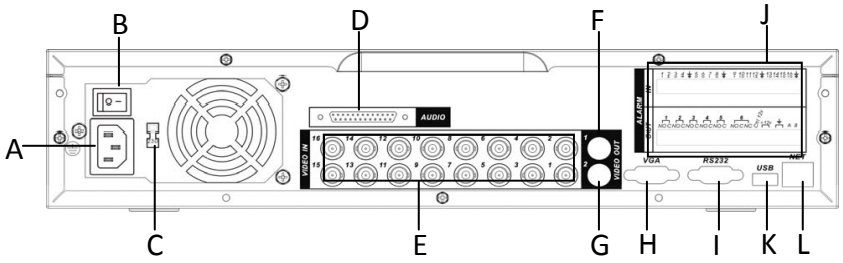
1.3 - Back Panel Introduction

DVR-400HP, DVR-400RT2 and DVR-800RT2 only



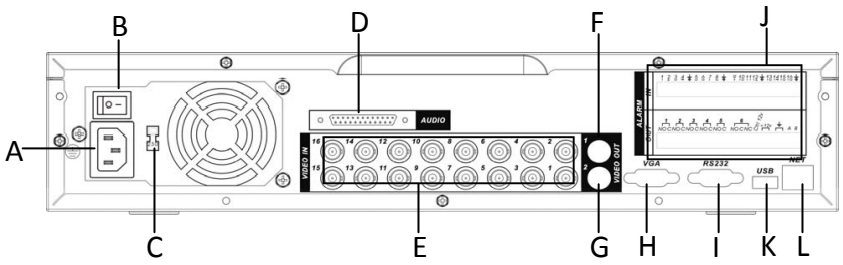
A - Power socket
B - Power switch
C - VAC switch
D - RS-232, for use with the MSP-KBD and troubleshooting only
E - Alarm/RS-485, use with the PTZ Decoder for Alarm/PTZ control
F - VGA
G - USB
H - Ethernet
I - Audio Output
J - Video Output
K - Video Inputs
L - Audio Inputs

DVR-800HP, DVR-1600HP and DVR-1600RT2 only



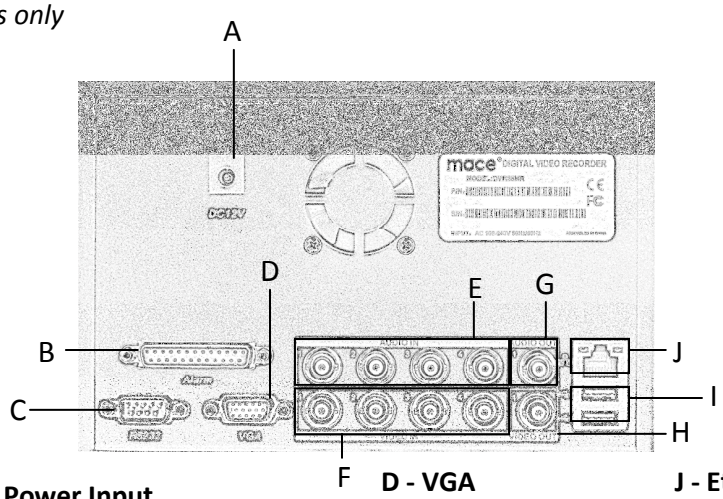
A - Power socket
B - Power switch
C - VAC switch
D - DB-25 Audio Dongle connection
E - Video Inputs
F - Video Output 1
G - Video Output 2
H - VGA
I - RS-232, for use with the MSP-KBD and troubleshooting only
J - Alarm/RS-485
K - USB
L - Ethernet

RT3 Series only



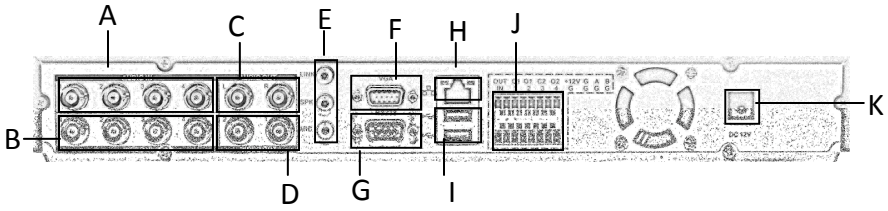
A - Power socket
B - Power switch
C - VAC switch
D - DB-25 Video Loop Out connection
E - Video Inputs
F - Video Output 1
G - Video Output 2
H - VGA
I - RS-232, for use with the MSP-KBD and troubleshooting only
J - Alarm/RS-485
K - USB
L - Ethernet

MR Series only



A - 12V Power Input
B - Alarm/RS-485, use with the PTZ Decoder for Alarm/PTZ control
C - RS-232, for use with the MSP-KBD and troubleshooting only
D - VGA
E - Audio Inputs
F - Video Inputs
G - Audio Output
H - Video Output
I - USB
J - Ethernet

MM Series only



A - Audio Inputs
B - Video Inputs
C - Audio Outputs
D - Video Outputs
E - AUX Audio
F - VGA

G - RS-232 for use with the MSP -KBD and troubleshooting only
H - Ethernet
I - USB
J - Alarm/RS-485
K - 12V Power Input

1.4 - Specifications

Detail	DVR-400RT2	DVR-800RT2	DVR-1600RT2
Operating System	Embedded Linux OS		
Interface	USB Mouse, IR Remote, Front Panel GUI		
Video Input	4/8 Channel Composite video (NTSC/PAL) BNC (1.0Vp-p, 75 Ohms)		16 Channel composite video (NTSC/PAL) BNC (1.0Vp-p , 75 Ohms)
Video Output	1 PAL/NTSC composite video output, BNC (1.0Vp-p, 75 Ohms) 1 VGA monitor output		2 PAL/NTSC composite video outputs, BNC (1.0Vp-p 75 Ohms) 1 VGA Monitor output
Audio Input	4 channel 200-1000mv 10K Ohms (BNC)	8 channel 200-1000mv 10K Ohms (BNC)	16 channel 200-1000mv 10K Ohms (RCA) 1 Two-Way audio communication RCA
Audio Output	1 Channel 2000mv 1K Ohms (BNC)		1 Channel 200-3000mv 5K Ohms (BNC)
Video Display	1, 4 Windows	1, 4, 9 Windows	1, 4, 9, 16 Windows
Video Standard	NTSC 525 Lines 60F/s, PAL 625 Lines 50F/s		
System Resource	Real-time recording, single channel playback and simultaneous network playback (Triplex)		
Image Resolution	NTSC/PAL Real-Time Monitor D1 704x480/704x576, Playback HD1 352x480/352x576, CIF 352x240/352x288		NTSC/PAL Real-Time Monitor D1 704x480/704x576, Playback CIF 352x240/352x288
Video Recording Rate	NTSC 1F/s - 30F/s, PAL 1F/s - 25F/s Adjustable		
Video Image Quality	6 Different Levels		
Video Compression	MPEG-4/H.264		
Audio Compression	PCM		
Hard Disk Capability	4 Internal IDE Ports, Maximum 8 HDDs		
Hard Disk Usage	Video 56 - 900MB/Hr Audio28.8MB/Hr		
Network Interface	RJ-45 10/100M Ethernet Connection		
Pan-Tilt Control	RS-485/Selectable Protocol		
Back-Up Methods	CD/DVD Drive, USB Drive, Network Download		
Alarm Input	8-Channel Voltage alarm Input		16-Channel Voltage Alarm Input
Alarm Output	3-Channel Relay Output (1 Channel Controllable, 12V Output)		6-Channel Relay Output
Alarm Relay	30VDC 2A, 125VAC 0.5A Relay Output		30VDC 2A, 125VAC 1A Relay Output
Power Supply	220V+/-25%, 50+/-2% Hz, 110V 60Hz		
Power Consumption	25W (No HDD)		40W (No HDD)
Working Temperature	14 F - 131 F		
Relative Humidity	10% - 90%		
Barometric Pressure	86kpa - 106kpa		
Size	2U Standard Industrial Case, 441mm x 430mm x 89mm (W x D x H)		
Weight	24lb. (No HDD)		

Specifications (cont'd)

Detail	DVR-400HP	DVR-800HP	DVR-1600HP
Operating System	Embedded Linux OS		
Interface	USB Mouse, IR Remote, Front Panel GUI		
Video Input	4/8 Channel Composite video (NTSC/PAL) BNC (1.0Vp-p, 75 Ohms)		16 Channel composite video (NTSC/PAL) BNC (1.0Vp-p , 75 Ohms)
Video Output*	1 PAL/NTSC composite video output, BNC (1.0Vp-p, 75 Ohms) 1 VGA monitor output	2 PAL/NTSC composite video outputs, BNC (1.0Vp-p 75 Ohms) 1 VGA Monitor output	
Audio Input	4 channel 200-1000mv 10K Ohms (BNC)	8\16 channel 200-1000mv 10K Ohms (RCA) 1 Two-Way audio communication RCA	
Audio Output	1 Channel 2000mv 1K Ohms (BNC)	1 Channel 200-3000mv 5K Ohms (BNC)	
Video Display	1, 4 Windows	1, 4, 9 Windows	1, 4, 9, 16 Windows
Video Standard	NTSC 525 Lines 60F/s, PAL 625 Lines 50F/s		
System Resource	Real-time recording, single channel playback and simultaneous network playback (Triplex)		
Image Resolution	NTSC/PAL Real-Time Monitor D1 704x480/704x576, Playback CIF 352x240/352x288		
Video Recording Rate	NTSC 1F/s - 7F/s, PAL 1F/s - 7F/s Adjustable		
Video Image Quality	6 Different Levels		
Video Compression	MPEG-4/H.264		
Audio Compression	ADPCM		
Hard Disk Capability	2 internal IDE Ports, Maximum 4 HDDs	4 Internal IDE Ports, Maximum 8 HDDs	
Hard Disk Usage	Video 56 - 900MB/Hr Audio28.8MB/Hr		
Network Interface	RJ-45 10/100M Ethernet Connection		
Pan-Tilt Control	RS-485/Selectable Protocol		
Back-Up Methods	CD/DVD Drive, USB Drive, Network Download		
Alarm Input	8-Channel Voltage alarm Input	16-Channel Voltage Alarm Input	
Alarm Output	3-Channel Relay Output (1 Channel Controllable, 12V)	6-Channel Relay Output	
Alarm Relay	30VDC 2A, 125VAC 1A Relay Output		
Power Supply	220V+/-25%, 50+/-2% Hz, 110V 60Hz		
Power Consumption	20W (No HDD)	30W (No HDD)	40W (No HDD)
Working Temperature	14 F - 131 F		
Relative Humidity	10% - 90%		
Barometric Pressure	86kpa - 106kpa		
Size	2U Standard Industrial Case, 441mm x 430mm x 89mm (W x D x H)		
Weight	24lb. (No HDD)		

Specifications (cont'd)

Detail	DVR-400RT3	DVR-800RT3	DVR-1600RT3
Operating System	Embedded Linux OS		
Interface	USB Mouse, IR Remote, Front Panel GUI		
Video Input	4\8\16 Channel Composite video (NTSC/PAL) BNC (1.0Vp-p, 75 Ohms)		
Video Output	2 PAL/NTSC composite video outputs, BNC (1.0Vp-p 75 Ohms) 1 VGA Monitor output, Video Looping All Channels, Programmable Video Matrix Output (BNC)		
Audio Input	4 channels 200-2800mv 30K Ohms (BNC) 1 Two-Way audio communication		
Audio Output	1 Channel 200-3000mv 5K Ohms (BNC)		
Video Display	1, 4 Windows	1, 4, 8, 9 Windows	1, 4, 8, 9, 16 Windows
Video Standard	NTSC 525 Lines 60F/s, PAL 625 Lines 50F/s		
System Resource	Live playback, Real-time recording, Search playback, Backup and simultaneous Network playback (Pentaplex)		
Image Resolution	NTSC/PAL Real-Time Monitor D1 704x480/704x576, Playback D1 704x480/704x576, 2CIF 704x240, HD1 352 x 480, CIF 352x240/352x288, QCIF 176x120/176x144		
Video Recording Rate	NTSC 1F/s - 30F/s, PAL 1F/s - 25F/s Adjustable (D1 Resolution on 16-Channel Model 1F/s - 22F/s)		
Video Image Quality	6 Different Levels		
Video Compression	H.264		
Audio Compression	ADPCM		
Hard Disk Capability	4 Internal SATA/IDE Ports, Maximum 8 HDDs Hard Disk Hibernation Technology, RAID Function		
Hard Disk Usage	Video 56 - 400MB/Hr Audio28.8MB/Hr		
Network Interface	RJ-45 10/100M Ethernet Connection		
Pan-Tilt Control	RS-485/Selectable Protocol		
Back-Up Methods	CD/DVD Drive, USB Drive, Network Download		
Alarm Input	16-Channel Voltage Alarm Input		
Alarm Output	6-Channel Relay Output		
Alarm Relay	30VDC 2A, 125VAC 1A Relay Output		
Power Supply	220V+/-25%, 50+/-2% Hz, 110V 60Hz		
Power Consumption	20W (No HDD)	30W (No HDD)	40W (No HDD)
Working Temperature	14 F - 131 F		
Relative Humidity	10% - 90%		
Barometric Pressure	86kpa - 106kpa		
Size	2U Standard Industrial Case, 441mm x 430mm x 89mm (W x D x H)		
Weight	24lb. (No HDD)		

Specifications (cont'd)

Detail	DVR-56MR	DVR-400MM
Operating System	Embedded Linux OS	
Interface	USB Mouse, IR Remote, Front Panel GUI	
Video Input	4 Channel Composite video (NTSC/PAL) BNC (1.0Vp-p, 75 Ohms)	
Video Output	1 PAL/NTSC composite video outputs, BNC (1.0Vp-p 75 Ohms) 1 VGA Monitor output	2 PAL/NTSC composite video outputs, BNC (1.0Vp-p 75 Ohms) 1 VGA Monitor output
Audio Input	4 channel 200-2800mv 30K Ohms (BNC) 1 Two-Way audio communication	
Audio Output	1 Channel 200-3000mv 5K Ohms (BNC)	
Video Display	1, 4 Windows	
Video Standard	NTSC 525 Lines 60F/s, PAL 625 Lines 50F/s	
System Resource	Live playback, Real-time recording, Search playback, Backup and simultaneous Network playback (Pentaplex)	
Image Resolution	NTSC/PAL Real-Time Monitor/Playback CIF 352x240/352x288	
Video Recording Rate	NTSC 1F/s - 7F/s, PAL 1F/s - 6F/s Adjustable	
Video Image Quality	6 Different Levels	
Video Compression	H.264	
Audio Compression	ADPCM	
Hard Disk Capability	1 Internal IDE Port, Maximum 2 HDDs Hard Disk Hibernation Technology, HDD Faulty Alarm	
Hard Disk Usage	Video 56 - 400MB/Hr Audio14.4MB/Hr	
Network Interface	RJ-45 10/100M Ethernet Connection	
Pan-Tilt Control	RS-485/Selectable Protocol	
Back-Up Methods	USB Drive, Network Download	
Alarm Input	4-Channel Programmable Voltage Alarm Input	
Alarm Output	3-Channel Relay Output	
Alarm Relay	30VDC 1A Relay Output	
Power Supply	220V+/-25%, 50+/-2% Hz, 110V 60Hz	
Power Consumption	12W (No HDD)	
Working Temperature	32 F - 131 F	
Relative Humidity	10% - 90%	
Barometric Pressure	86kpa - 106kpa	
Size	Needs Measurement	
Weight	7lb. (No HDD)	

CHAPTER 2

Chapter 2 - System Navigation

2.1 - Front Panel Operation (*RT2/HP/RT3 Series*)

Key Name	Symbol	Function
USB Connection		Connecting a USB mouse or USB device for backup (USB Disk, External CD/DVD Burner)
Power Button		Press once to turn on DVR; press and hold for 3 seconds to turn off DVR
CD/DVD Drive		Eject disc tray by pressing this button, located behind the front panel cover
Previous File		During playback, press to play previous file in search list
Reverse Play/ Pause		During playback, press to rewind and pause
Slow Speed		Change playback speed to 1/4, 1/8, 1/16 and 1/32 original playback speed

System Navigation (cont'd)

Key Name	Symbol	Function
Record	●	Press to display the record menu for manual start/stop recording
Function	**Fn**	Press in single-channel mode to enter PTZ or Color Setting menu; Press to select region in Motion Detection menu; Backspace key when entering system password; Press in HDD info menu to shift between drive space and recorded time display
Fast Forward	▶▶	Press for 4x, 8x and 12x normal playback speed
Play/Pause	▶❚❚	Play or pause playback
Next File	▶❙	Press during playback to play next file in search list
Shift	⇧	Press to shift between numbers, letters, CAPS and symbols when entering system password
Numeric Keypad	**0-9**	Number and alphanumeric input
Key Combination 10+	**- / --**	Press in combination with 0-6 to full screen channel 10-16

System Navigation (cont'd)

Key Name	Symbol	Function
Esc	**Esc**	Press to return to previous menu, exit menu or cancel playback
Mult	**Mult**	Press to select single, quad, 8, 9 and 16-channel display modes
Recording LEDs		Indicates channel is recording
Enter	**Enter**	Press once to bring up system login screen; Press in any menu to advance to Save, Search or Backup; Press with item highlighted to proceed
Directional Arrows	▲ ▼ ◀ ▶	Press left or right to select menu items; Press up or down to change menu items; Press right during playback to skip forward; Press up or down during playback to change channels
Outer Jog Wheel	◀◀ ▶▶	Press to go left or right in system menu; Press during playback for 4x. 8x and 16x original play-back speed
Inner Jog Wheel	**N/A**	Press to go up or down in system menu; Scrolls between single, quad, 8, 9 and 16-channel dis-play modes; During paused playback performs reverse frame-by-frame playback
Standby Power	**ACT**	DVR is in standby power mode; Blinks when IR remote signal is received

(*56MR Series*)

Key Name	Symbol	Function
Shift	**Shift**	Press to shift between numbers, letters, CAPS and symbols when entering system password
Directional Arrows	▲ ▼ ◀ ▶	*See Page 12 for a full description*
Esc	**Esc**	Press to return to previous menu, exit menu or cancel playback
Enter	**Enter**	*See page 12 for a full description*
Reverse Play/Pause	⏸◀	Play or pause playback in reverse
Reverse Play/Pause	▮▸	Play or pause playback in reverse
Previous File	▮◀	During playback, press to play previous file in search list
Record	**Rec**	Press to display the record menu for manual start/stop recording
Fn	**Fn**	*See Page 11 for a full description*
Next File	▶▮	Press during playback to play next file in search list
Fast Forward	▶▶	Press for 4x, 8x and 12x normal playback speed
Play/Pause	▶⏸	*See page 12 for a full description*

System Navigation (cont'd)

(*400MM Series*)

Key Name	Symbol	Function
Play/Pause	▶❚❚	Play or pause playback
Fast Forward	▶▶	Press for 4x, 8x and 12x normal playback speed
Next File	▶❙	Press during playback to play next file in search list
Shift	**Shift**	Press to shift between numbers, letters, CAPS and symbols when entering system password
Esc	**Esc**	Press to return to previous menu, exit menu or cancel playback
Reverse Play/Pause	❚◀	Play or pause playback in reverse
Slow Speed	▶	Change playback speed to 1/4, 1/8, 1/16 and 1/32 original playback speed
Previous File	❙◀	During playback, press to play previous file in search list
Fn	**Fn**	*See Page 11 for a full description*
Record	**Rec**	Press to display the record menu for manual start/stop recording
Directional Arrows	▲ ▼ ◀ ▶	*See Page 12 for a full description*
Enter	**Enter**	*See page 12 for a full description*

2.2 - USB Mouse

Left Key Functions

- Click once to bring up the system menu login screen
- Click once on value to shift between numbers, letters, CAPS and symbol in password or name field
- Click once in password field to bring up numeric keypad
- Click to open any highlighted menu
- Click to show contents of drop-down list
- Click on menu function to perform save, copy, baste, backup, search etc.
- **Double-click on channel name to full screen**
- **Double-click on desired file to playback**
- **Click and drag on selected area during playback, then click once to perform a digital zoom**
- **Click and drag in motion detect area to select or de-select detection area**
- **Click and drag cover area to expand or reduce cover area size and location**
- **Click and drag channel name/time display in encode menu**

Right Key Functions

◊ Select single, quad, 8, 9 or 16 channel display modes
◊ Select Pan Tilt Zoom control in single-channel mode
◊ Select Color Setting menu in single-channel mode
◊ Select Search Menu
◊ Select Record Menu for manual or schedule recording
◊ Enable or disable alarm outputs
◊ Enable or disable alarm inputs
◊ Open Video Matrix menu
◊ Open main menu

Scroll Wheels Functions

⇒ Scroll between items in drop-down list
⇒ Increase or decrease numerical values

Note

It is recommended that the USB mouse be used whenever possible for both the best user experience and ease-of-use

2.3 - IR Remote Control

Key Name	Symbol	Function
Add	**Add**	Press and input DVR address (*008 is default*) and press Enter to program remote
Mult	**Mult**	Selects single, quad, 8, 9 and 16-Channel display modes
Numeric Keypad	**0-9**	Number and alphanumeric input
Record	**Record**	Brings up the record menu for manual stop/start recording
Enter	**Enter/ Menu**	Press once to bring up system menu login screen; Press in any menu to advance to Save. Search or Backup; Press with item highlighted to proceed
Fn	**Fn**	Press in single-channel mode to enter PTZ or Color Setting menu; Select or de-select region in motion detection menu; Backspace when entering system password; Shift between drive space and recorded times display in HDD info menu
Esc	**Esc**	Press to return to a previous menu, exit menu or cancel play-back
Directional Arrows	▲ ▼ ◀ ▶	Press left or right to select menu items; Press up or down to change menu items; Press right during playback to skip forward; Press up or down during play-back to change channels
Previous/Next File	↑↓	Press during playback to skip between files in the search list
Slow Speed	⏮	Press for playback 1/4, 1/8, 1/16 and 1/32 normal playback speed
Stop	■	Press to stop playback
Play/Pause	▶⏸	Play or pause playback
Skip	⏭	Press during playback to skip forward
Skip Reverse	⏮	Press during playback to skip backwards
Fast Forward	▶▶	Press for 4x, 8x and 12x normal playback speed

CHAPTER 3

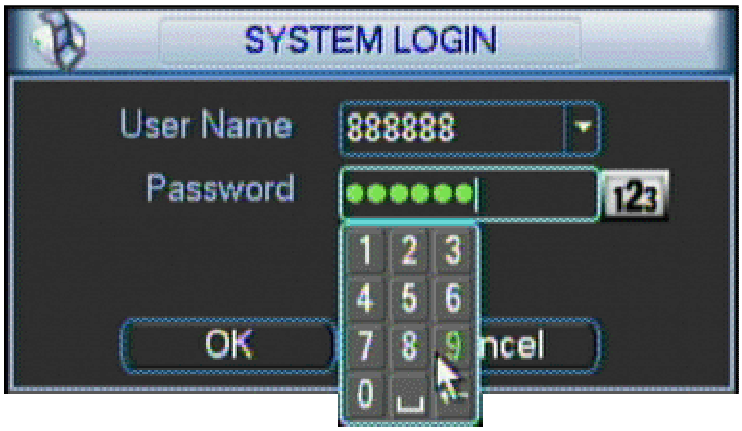
Chapter 3 - Basic Settings

3.1 - Logging into the System Menu

Enter the System Menu by doing one of the following:

⇒ Left-clicking once on the screen
⇒ Pressing Enter on the front panel
⇒ Press the Enter/Menu key on the IR Remote

This will bring up the System Login screen



Using the numerical pad or mouse select **888888** as the username **and** password (by default), click OK to enter the System Menu

3.2 - System Settings

A mouse will be used to navigate the system menu, please press "Enter" wherever a "click" is specified

The System menu (Figure 3.21) gives you access to all of the DVRs settings.

Click on "Setting" to continue.

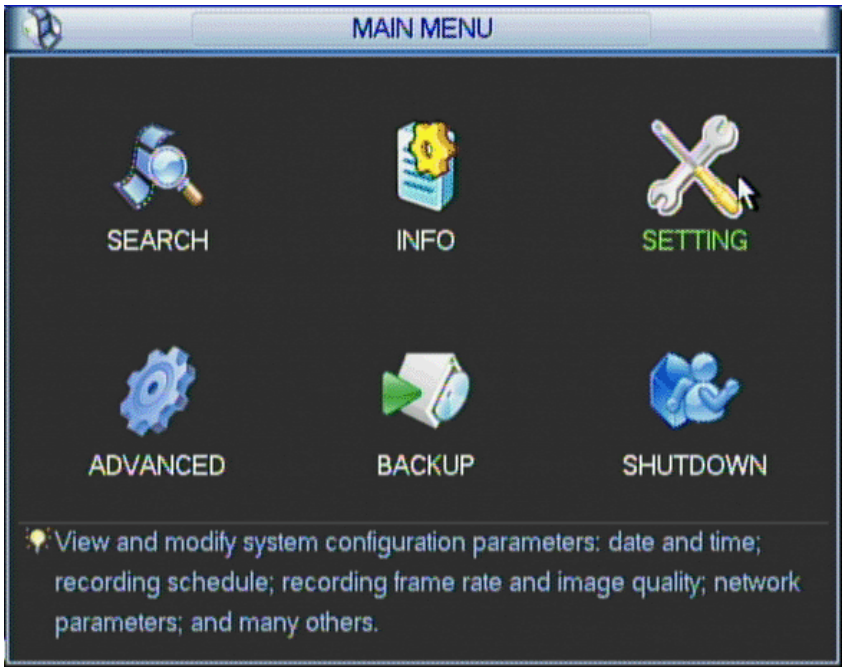


Figure 3.21

Once in the Settings menu, you will have many items to choose from (Figure 3.22).

For this chapter we will be focusing on the General, Encode, Schedule and Display menus.

Click on General to continue

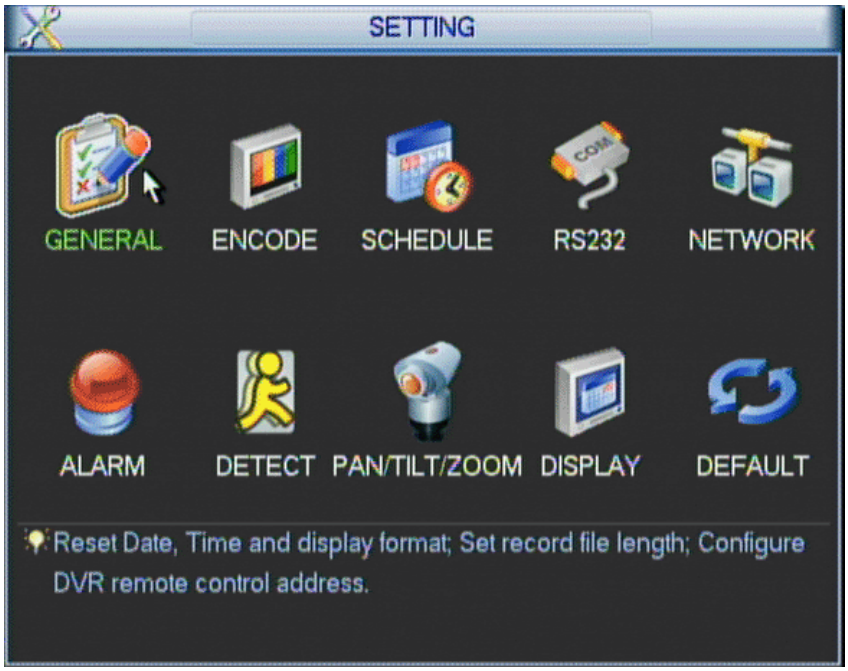


Figure 3.22

3.3 - General

System Time - Make sure that the System Time matches the local time where the system is located. After changing system time click the "Save" next to the time. **This will save the time to a on-board battery that keeps the time even when the system is turned off.**

Date Format/Separator - You can change the date format and separator type base on personal preference or location

Time Format - Choose between 12-Hour (AM/PM) and 24-Hour time formats

Language - Choose between English/Spanish language formats (May not be available on all versions, call support for upgrade if Spanish required)

HDD Full - This specifies what action the DVR performs when all hard drives become full. By default this is set to "Overwrite" to prevent the loss of video. When set to "Stop" the DVR will have an alarm requesting action.

Pack Duration - The minimum file size when set to record continuously, this can be lowered and increased based on personal preference.

DVR No. - Also known as the Address of the DVR, this is used with the IR Remote control and MSP-KBD keyboard controller.

Video Standard - Choose between NTSC and PAL video standards (Some models will not have PAL available, call support to see if upgrade is available)

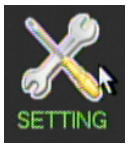
Auto Logout - Once this time is exceeded, the system will require the username and password to access the menu.

Figure 3.31

To save your settings, click **on at the bottom of the screen**

To default settings, click **on at the bottom of the screen**

3.4 - Encode

From the System menu, click on 

then

to enter the menu.

Settings can be individually assigned to each channel

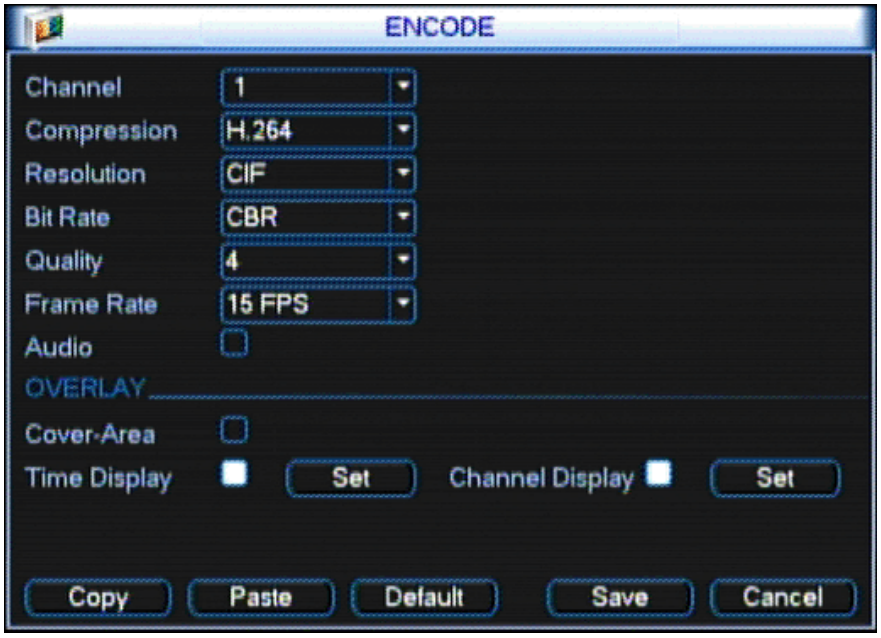


Figure 3.41

Channel - Select channel 1-16 or “All” for setting to be applied to

Compression - By default set to H.264, this setting may also include MP4 in certain Versions

Resolution - The resolution of the recording is very important to the overall quality. The resolution is made up of horizontal and vertical lines, which when multiplied gives us the "Total Active Pixels." Below is a table to use as a reference

Resolution	H x V Lines (NTSC)	Total Active Pixels	Models
CIF	352 x 240	84,480	All Models RT3 Series (Extra Stream)
BCIF	528 x 240	126,720	DVR-400RT2 DVR-800RT2
QCIF	176 x 120	21,120	RT3 Series (Extra Stream)
HD1	352 x 480	168,960	DVR-400RT2 DVR-800RT2 RT3 Series
D1	704 x 480	337, 920	RT3 Series*

Figure 3.42

Bit Rate - Determines whether the DVR is writing video at a Constant bit rate (CBR) or a Variable bit rate (VBR). CBR is the default setting, while VBR will vary write speed based on the amount of motion detected

Quality - Adjust the amount of compression used to encode the video files, with 1 being the highest compression, and 6 using little to no compression at all

Frame rate - Adjust the amount of frames the DVR records per second, with 30 being the highest

Audio - Must be selected if audio recording is desired

*RT3 Series maximum FPS 30 - 7 depending on how many channels use D1 resolution

Encode (cont'd)

Cover Area - In the "Overlay" section, you can select a privacy mask by using "Cover Area." Simply use the mouse to click and drag privacy mask where needed

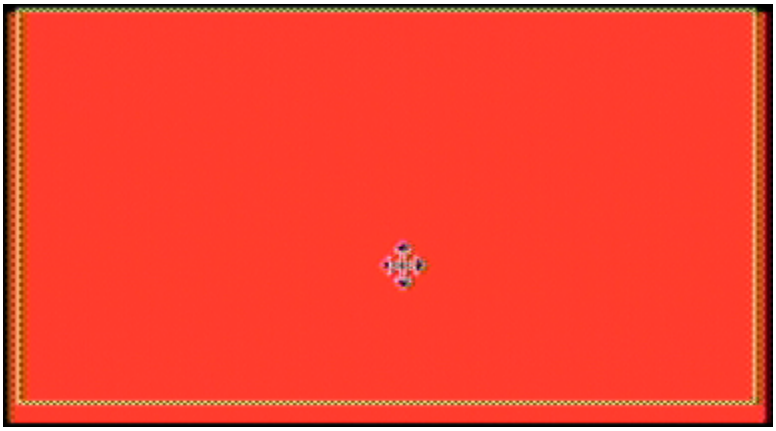


Figure 3.43

Channel/Time Display - You can also move the Channel name to a desired position on the video channel (Figure 3.44) and Time display in the same manner (Figure 3.45)

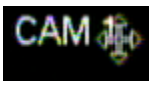


Figure 3.44

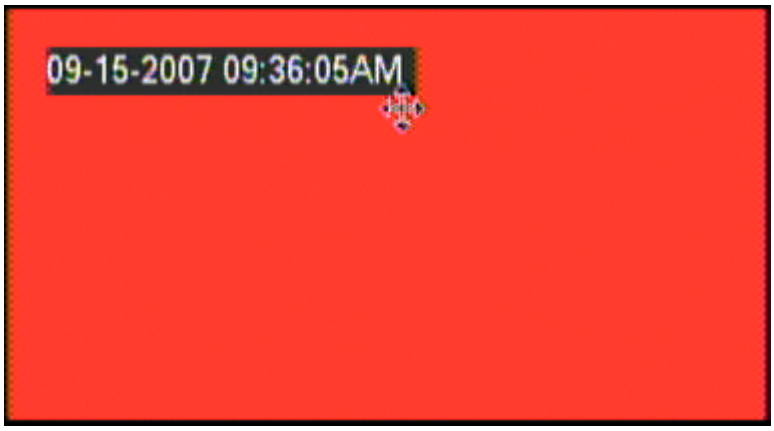
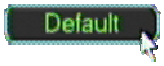


Figure 3.45

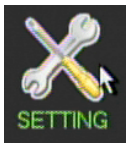
To save your settings, click on **at the bottom of the screen**

To copy your settings to a different channel, click **at the bottom of the screen**

To paste copied settings to a different channel, click **at the bottom of the screen**

To default your settings, click on  **at the bottom of the screen**

3.5 - Schedule

From the System menu, click on 

then

to enter the menu.

Schedules can be made by channel and day of the week in 6 different periods.

Channel - Select channel 1-16 or "All" for setting to be applied

Week Day* - Select day of the week or "All" to apply schedule setting

Prerecord - Selected by default, this setting allows the DVR to constantly record and recycle a 15-second clip on any motion detection schedule. This will help prevent the loss of important video based on when motion is triggered

Redundancy - This feature is meant to work with a drive that is set to "redundant," this is considered the internal RAID function of the DVR, and will make a copy of any schedule on a second or third drive

Record Type - There are 3 record types, Regular (or Schedule), Motion Detection (MD) and Alarm.

Period 1-6 - Each channel can have 6 different schedule periods per day. Periods are in 24-Hour format to prevent errors and minimize overlapping schedules

*Note - When entering the Schedule menu, DVR will always default setting to the current day, please change the week day to desired day to see the proper schedule

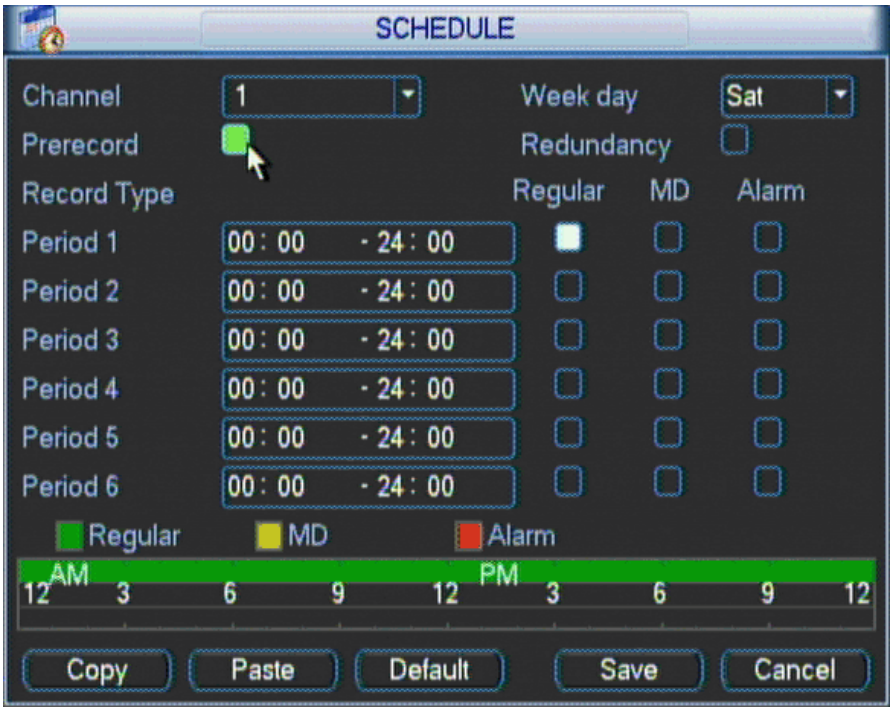
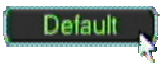


Figure 3.51

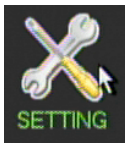
To save your settings, click on **at the bottom of the screen**

To copy your settings to a different channel, click **at the bottom of the screen**

To paste copied settings to a different channel, click **at the bottom of the screen**

To default your settings, click on  **at the bottom of the screen**

3.6 - Display

From the System menu, click on 

then

to enter the menu.

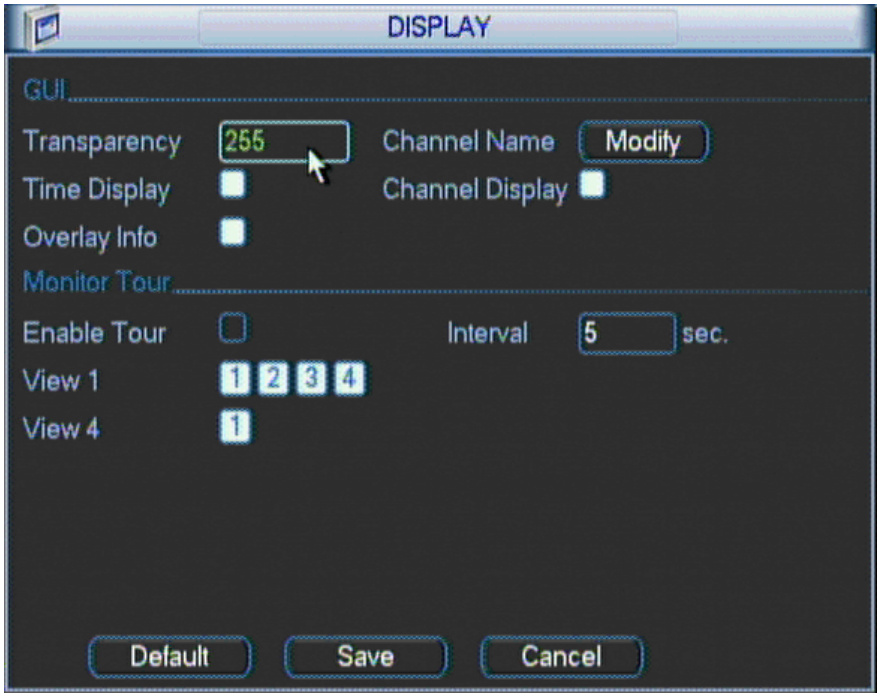
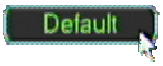


Figure 3.61

To save your settings, click on

at the bottom of the screen

To default settings, click on 

at the bottom of the screen

Transparency - Set the menu transparency, 128 being the lowest and 255 the highest

Channel Name - Modify the channel names (Figure 3.62)

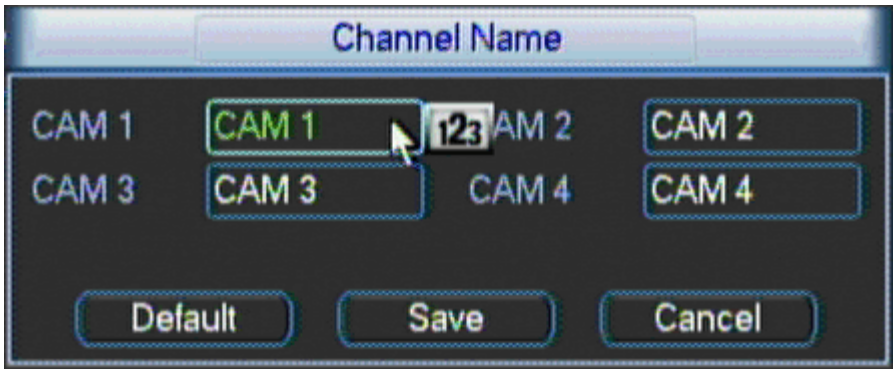


Figure 3.62

Time Display - Enable or disable the System time from displaying

Channel Display - Enable or disable channel names from real time monitor view

Overlay Info - Remove record icon, signal diagnostic and motion detect icons from real-time monitor view

Enable Tour - Select this function to enable the camera tour on the primary display, below are the available single and split screen modes

Interval - Measured in seconds, this is the amount of time the tour will dwell on each selected monitor view

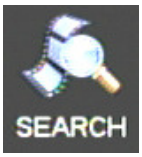
Note - Disabling the time or channel display in this menu will not remove them from the video recording, to disable please see 3.4 - Encode (Page 24)

CHAPTER 4

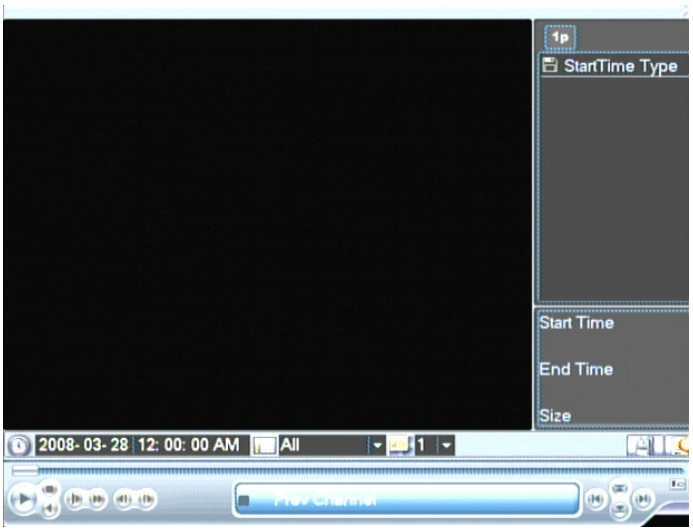
Chapter 4 - Searching Video

4.1 - Search Menu

First, log into the DVR as described in **3.1 - Logging into the System menu**

Click on 

to continue, The search window will appear.



Continue on next page

Searching Video (cont'd)

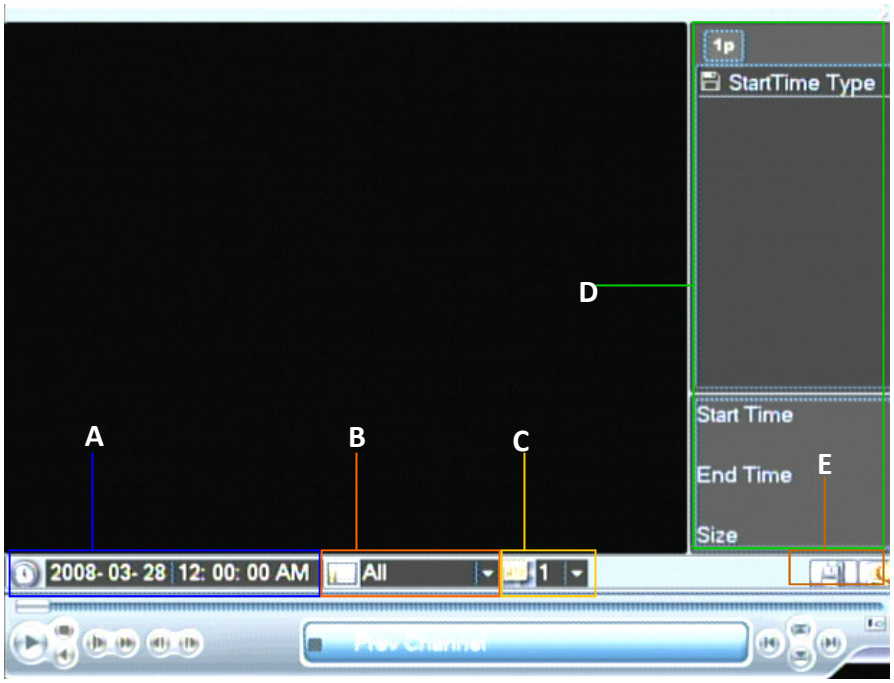


Figure 4.11

Overview

The search menu gives you a quick and easy to way search, playback and backup video files to a CD or USB disk. The other features available on our systems include:

- Digital Zoom
- Single and Dual-channel playback
- Calendar view with recorded dates highlighted
- Search based on record type
- Link to backup menu for easy archiving

A. Search Date/Time - Input the desired date when the event occurred, you can also use the calendar, which will highlight any date with recorded video. Enter the desired time and click on Search (D)

Click on to bring up the calendar screen (Figure 4.12)

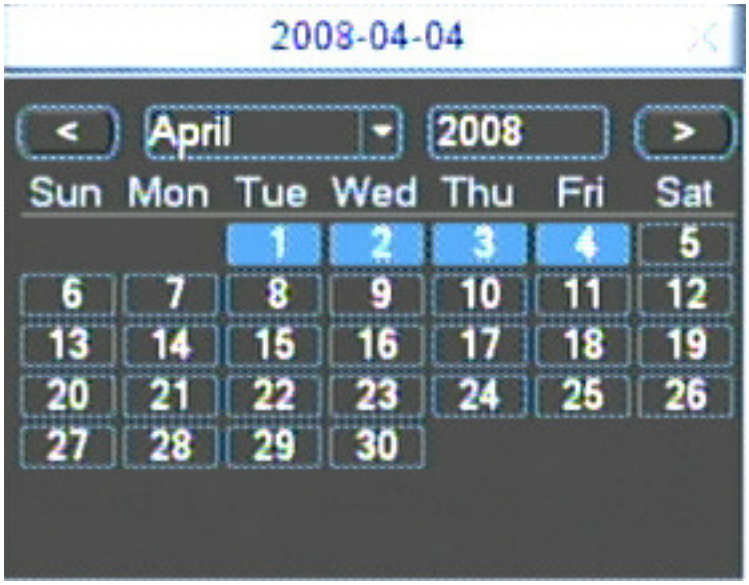


Figure 4.12

B. Record Type - Choose between All (default) MD and Alarm record search

C. Channel - Select Channels 1-16. **Some versions allow you to search 2 channels simultaneously.**

D. Results Window - After a search is performed, results will be displayed in this area, Double-click on a file to play

E. Backup/Search - Click on the left button to jump to the backup menu, and the right button to search. If you are not using a mouse, press Enter twice to perform the search

4.2 - Playback Bar Overview

The playback bar is used to control the video that is being displayed during search

Figure 4.21

(From left to right)

Function	Symbol	Description
Start Playback		Click to play highlighted file (or first file if none highlighted) from the results window
Stop		Stop playback
Play Backward		Play recording backwards at normal speed
Slow Play		Playback at 1/4, 1/8, 1/12 or 16 normal speed*
Fast Play		Play at 4x, 8x and 12x normal speed*
Previous Frame		During paused playback, lets you search frame-by-frame in reverse
Next Frame		During paused playback, lets you search forward frame-by-frame
Previous File		Plays the previous file in the search results window
Next File		Plays the next file in the search results window
Previous Channel		Jump to the previous channel within the same time frame
Next Channel		Jump to the next channel within the same time frame
Full Screen		Displays video playback in full screen mode. **You can also Double-click on the screen**

*Speeds may vary depending on software version

4.3 - Advanced Search Features

From the search menu you can perform a backup, and also digitally zoom on playback

Select the desired files from the search list by checking them, then click on
To bring up the backup menu

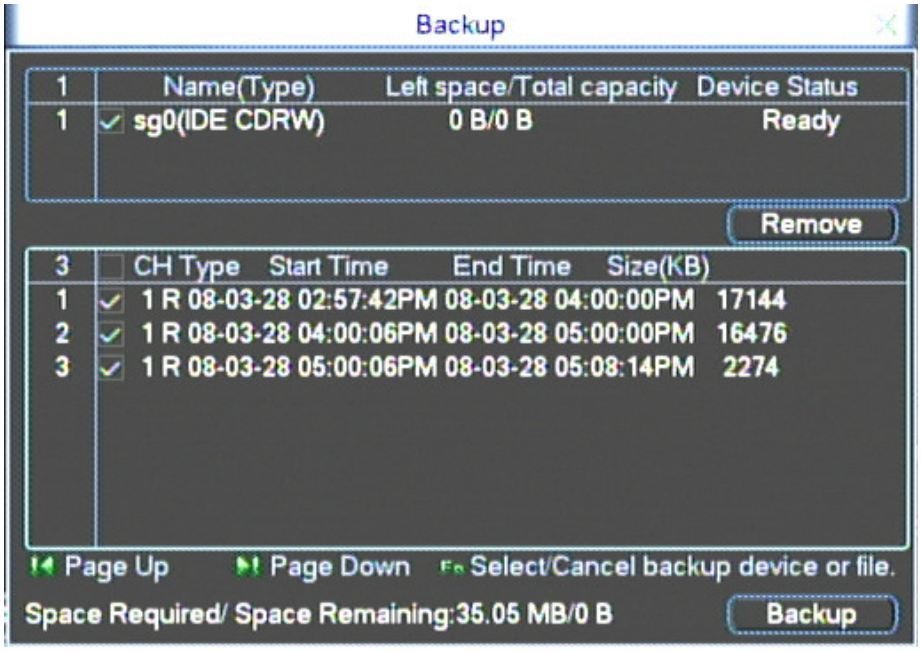

Backup
1 Name(Type) Left space/Total capacity Device Status
1 sg0(IDE CDRW) 0 B/0 B Ready
Remove
3 CH Type Start Time End Time Size(KB)
1 1 R 08-03-28 02:57:42PM 08-03-28 04:00:00PM 17144
2 1 R 08-03-28 04:00:06PM 08-03-28 05:00:00PM 16476
3 1 R 08-03-28 05:00:06PM 08-03-28 05:08:14PM 2274
Page Up Page Down Select/Cancel backup device or file.
Space Required/ Space Remaining:35.05 MB/0 B
Backup

Figure 4.31

From this screen you can select the backup device and then backup

During playback, click-and-drag the mouse over a desired area you want to zoom (Figure 4.32)

Continues on next page

Advanced Search Features (cont'd)

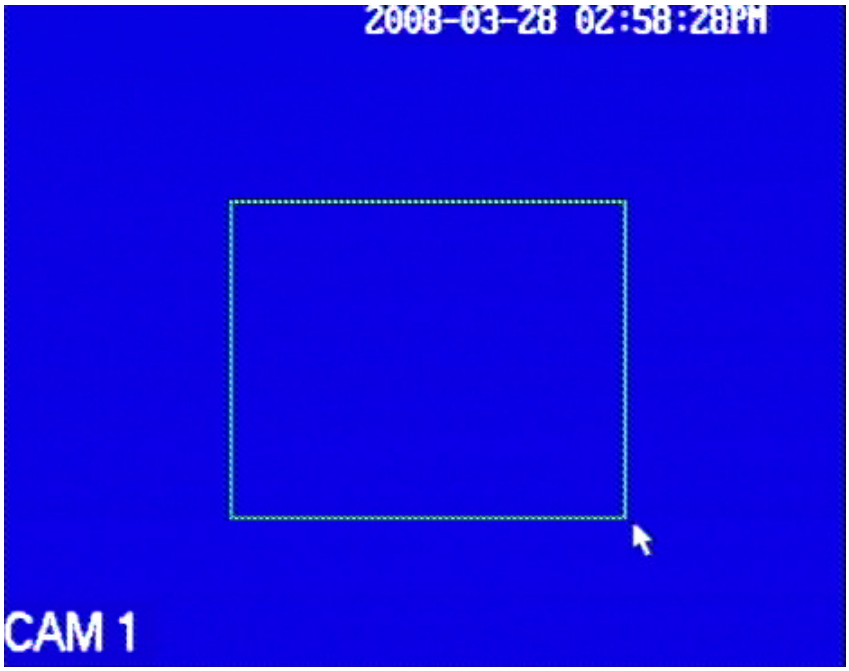


Figure 4.32

Then click once in the selected area to digitally zoom (Figure 4.33). Right-click to return to normal viewing size

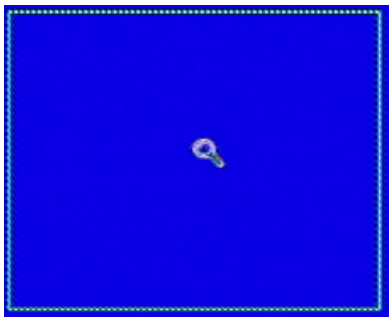


Figure 1.33

CHAPTER 5

Chapter 5 - Backup Video

This chapter will teach you how to backup video, along with the different types of media that can be used to perform a backup

5.1 - Backup Media

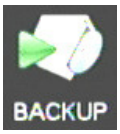
Media Type	Capacity	Requirement
CD-R	650MB - 700MB	None
CD-RW	650MB - 700MB	Erase contents if being reused
DVD-R	3.95GB - 4.71GB	DVD burner installed
DVD+R	4.7GB	DVD burner installed
DVD-RW	3.95 - 4.71GB	DVD burner installed
USB	64MB - 2GB	No additional drivers required, format in FAT or FAT32
USB External Drive	650MB - 500GB	No additional drivers required

All of our DVRs are designed for “on-demand” backup. Backup of weeks worth of video onto these types of media is not recommended

5.2 - Backup Menu Overview

Here we will show the 2 different types of backup menus, the RT3 and HP/RT2 style menu

First, log into the DVR as described in **3.1 - Logging into the System menu**

Click on 

to continue, The backup window will appear.

5.2.1 - RT3 Style Menu

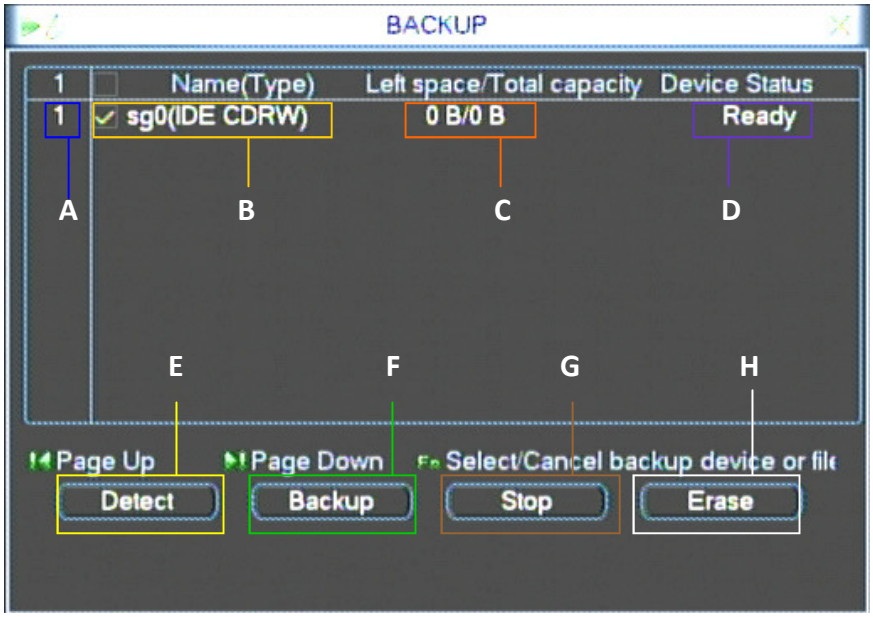


Figure 5.21

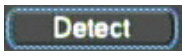
Note - The CD/DVD/USB capacity will not display unless device is inserted before entering the backup menu. You can also click

to refresh the menu

A. **Device Number** - Displays the number assigned by the DVR to the backup device. By default the CD/DVD drive will be displayed as "1," any additional device (like a USB drive) will be shown in the same manner
B. **Device Type -** Shows the type of backup device that is available. A CD/DVD burner will appear "**sg0(IDE CDRW)**", while a USB device will save "**sdb(USB DISK)**"
C. **Left Space/Total Capacity -** Displays the available space and the total capacity on the backup device

Note

The CD/DVD and USB capacity will not show unless you insert the disc before entering the backup menu.

You can also click 

to refresh the disk information

D. **Device Status -** Will display whether the device is ready for backup or has an error
E. **Detect -** Scans DVR for any attached backup devices
F. **Stop -** Stops the device during backup or detect
G. Erase - Attempts to erase media. Check only one device that you want to eras, if the format is successful, "Left space" and "Total capacity" will match
H. Backup - This opens the backup menu (Figure 5.22)

Note

If there is no disc attached for backup, the DVR will display an error "Disc Not Present." Insert a disc then "Detect" to resolve this issue and proceed to the backup screen

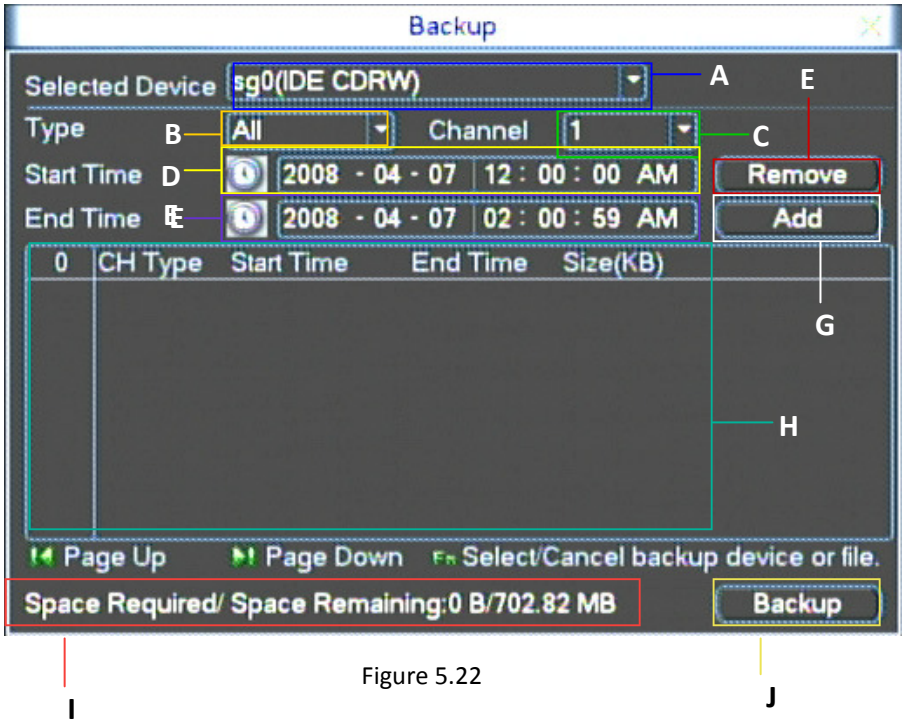


Figure 5.22

A. Selected Device - The device drop-down list allows you to choose from any detected devices for backup

B. Type - Selects the type of records you can search from, this includes All, MD and Alarm

C. Channel - Selects which channel to search in the backup results, you can change this and backup files from different channel in the same compilation

Note

If the End Time is later than the Start Time no results will be displayed

RT3 Style Menu (cont'd)

D. **Start Time -** The earliest time that you need to backup should be entered here, if the exact time is not available, the DVR will display the earliest file recorded

E. End Time - The latest date/time you need should be entered.

F. Remove - First, check any files in the search results that you do not wish to backup, then click Remove to remove them from the compilation

G. **Add -** Once you have entered a valid Start and End time, click Add to display those files in the backup list

H. Backup List - Displays all of the file information, this includes the Record number, Channel, Type, Start and End Time along with the file size

I. Space Required/Space Remaining - Shows the required space for the current compilation and the amount of space that is left on the backup device

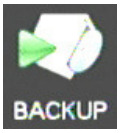
Note

In order to ensure proper backup, make sure that the space remaining exceeds the amount in the space required field

J. Backup - Once you are ready and have the files you need in the Backup list, click "Backup" to backup the files to the selected device. The time remaining will appear on the screen. **Pressing the "Fn" button during backup cancels the process**

5.22 - HP/RT2 Style Menu

First, log into the DVR as described in **3.1 - Logging into the System menu**

Click on 

to continue, The backup window will appear

The first selection will be the

menu (Figure 5.23)

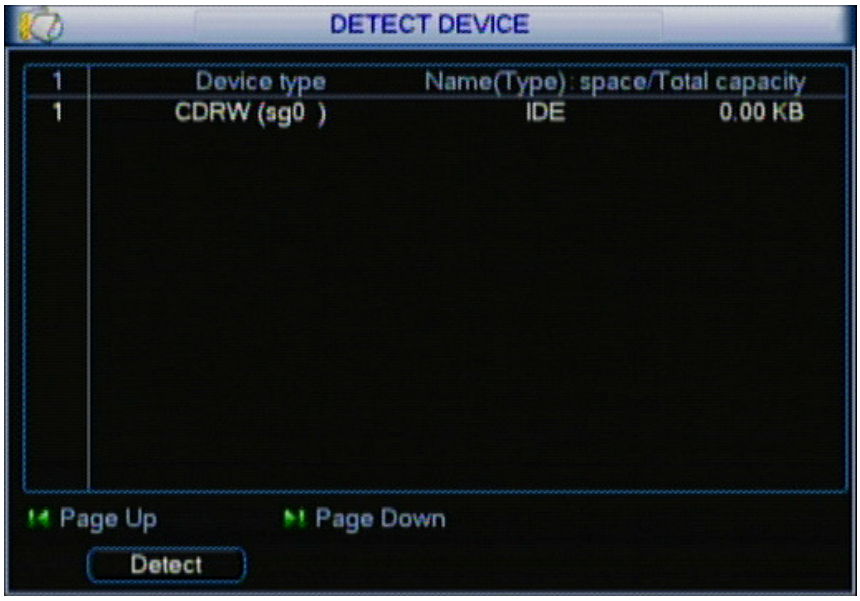


Figure 5.23

From this menu you should press

if you are using a USB drive, this will prevent any errors when trying to backup

After doing a Right-click to return to the previous menu, click

to perform a backup

For instruction please refer to 5.21 - RT3 Style Menu

5.3 - MACE Player Overview

The Mace Player version 1.8.10.4 was used for this manual. To download the latest version of the player please visit www.macepro.com/support/software

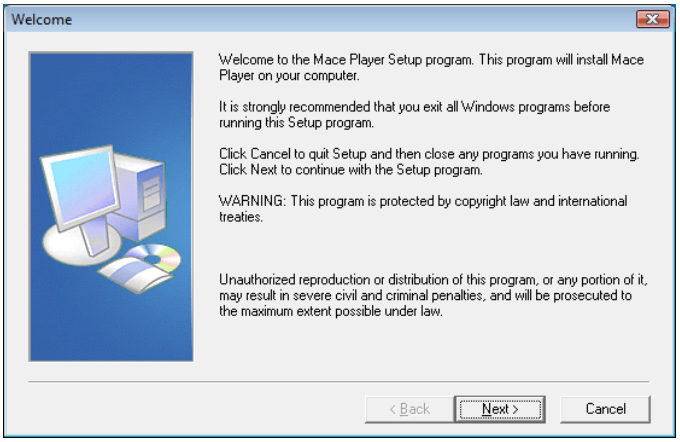
The MACE Player is a powerful tool for viewing your DVR's video files, and is compatible with any version video file downloaded from a Mace DVR

Figure 5.31

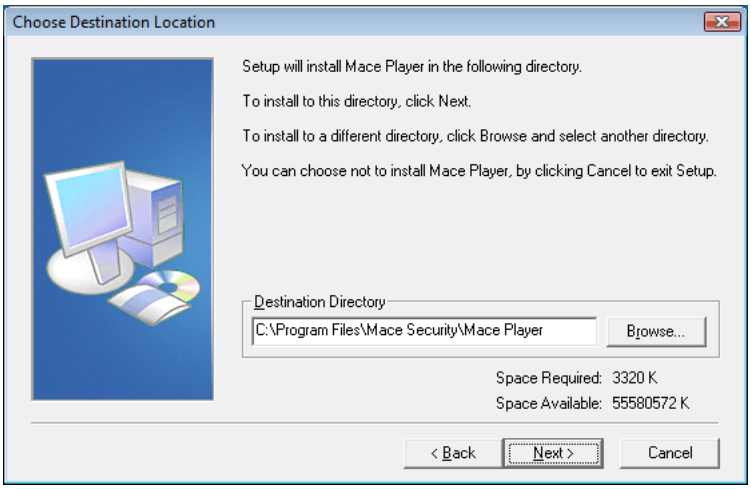
5.3.1 - Installation

After downloading the player from our website (Also included on DVR software CD) Double-click on the installation file to install

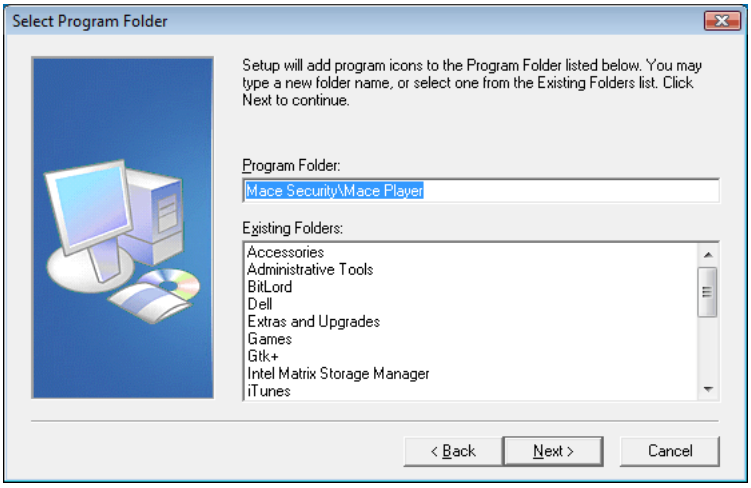
The following window will appear:


Welcome
Welcome to the Mace Player Setup program. This program will install Mace Player on your computer.
It is strongly recommended that you exit all Windows programs before running this Setup program.
Click Cancel to quit Setup and then close any programs you have running. Click Next to continue with the Setup program.
WARNING: This program is protected by copyright law and international treaties.
Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.
< Back
Next >
Cancel

Click next and select the directory where you would like to install the player. **By default the location is C:\Program Files\Mace Security\Mace Player**

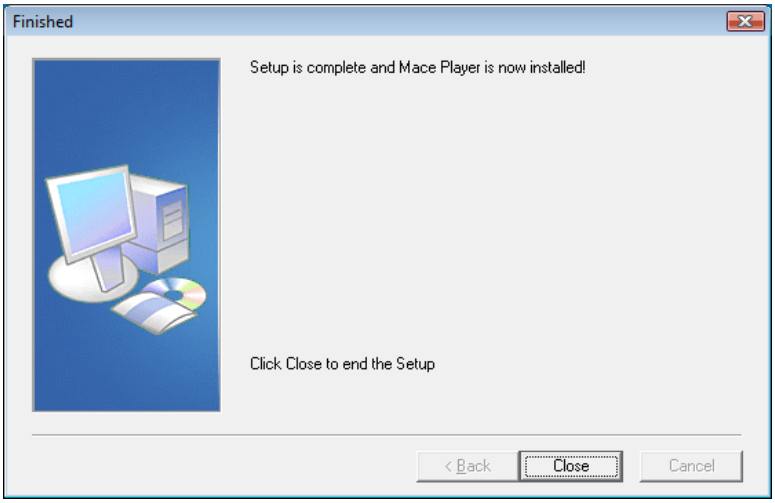

Choose Destination Location
Setup will install Mace Player in the following directory.
To install to this directory, click Next.
To install to a different directory, click Browse and select another directory.
You can choose not to install Mace Player, by clicking Cancel to exit Setup.
Destination Directory
C:\Program Files\Mace Security\Mace Player
Browse...
Space Required: 3320 K
Space Available: 55580572 K
< Back
Next >
Cancel

After clicking next you will be asked to select the location of the program in the Start Menu



Installation (cont'd)

Click close to complete the installation



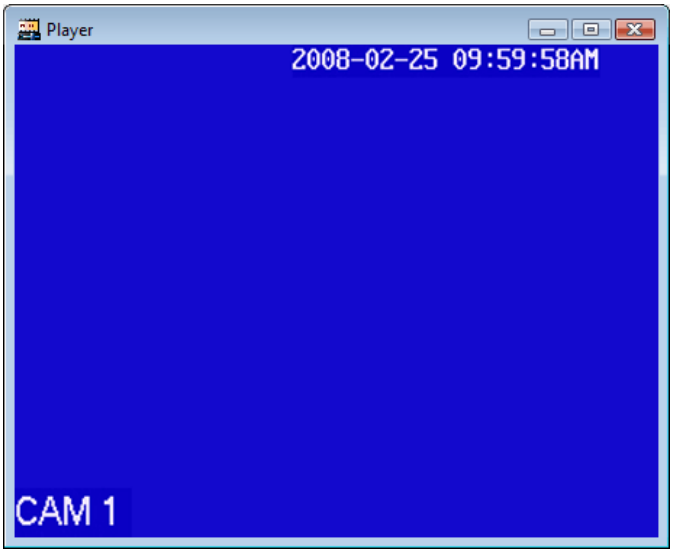


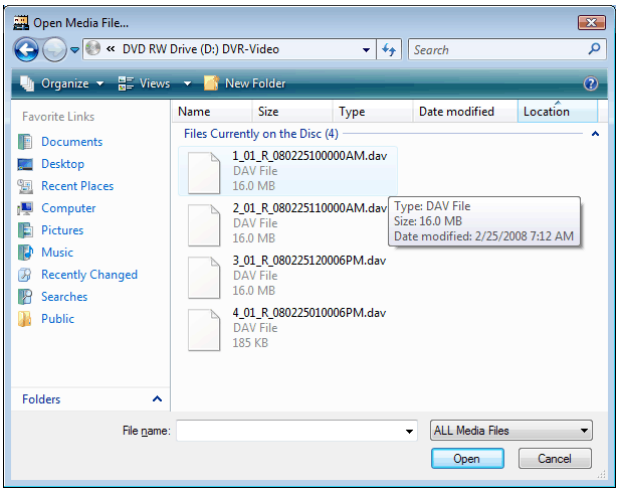
Figure 5.36

5.3.2 - Using the MACE Player

After installation, open the player by going to **Start Menu> All Programs> Mace Security> Mace Player.** On first run, the program will ask you if you want to "Associate File Types?," to which you want to click OK

There are 3 ways to open DVR files with the player

1. Double-click on a file with the extension *.dav or *.mp4, the video window will appear (Figure 5.36



2. Click the button on the player software and browse for the file, playback will begin shortly thereafter

3. Open the player and then drag-and-drop the file into the player bar

During playback you can click the button to full screen the image (or Double-click)

Switch between shuffle and repeat by clicking the button

clicking on the button next to the Mace logo allows you to change the parameter settings of the player (Figure 5.39)

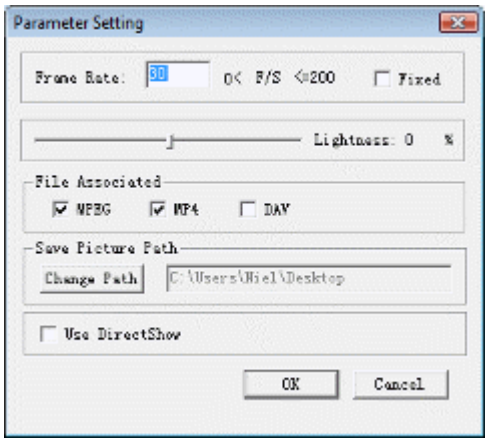


Figure 5.39

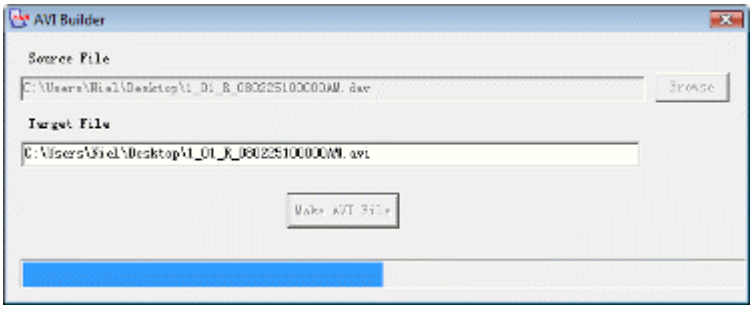
Note

The settings in this menu should only be altered if you are experiencing abnormally fast or slow payback. Simply enter the recording frame rate to correct this problem

5.4 - Advanced Player Features

By popular demand we have added a tool to the mace player that allows you to easily convert files from *.dav and *mp4 format to a *.avi file

Click on the button to open the AVI conversion tool



Browse for the desired file and then click on the “Convert” button in the center screen to create an *.avi file in the same directory

Note

Please make sure that the file is not on a CD when converting, this will result in an error because the CD will not allow a file to be written to it. Copy the necessary files to the computer’s hard drive first

You can also take a snapshot by clicking the button during playback

By default the screenshot folder is C:\Program Files\Mace Security\Mace Player\picture. This will not work properly in Vista unless UAC (User Account Control) is disabled.

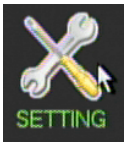
CHAPTER 6

Chapter 6 - Networking

This chapter will cover the DVR's network configuration for both local and remote Access, installing and using the client software along with common troubleshooting tips

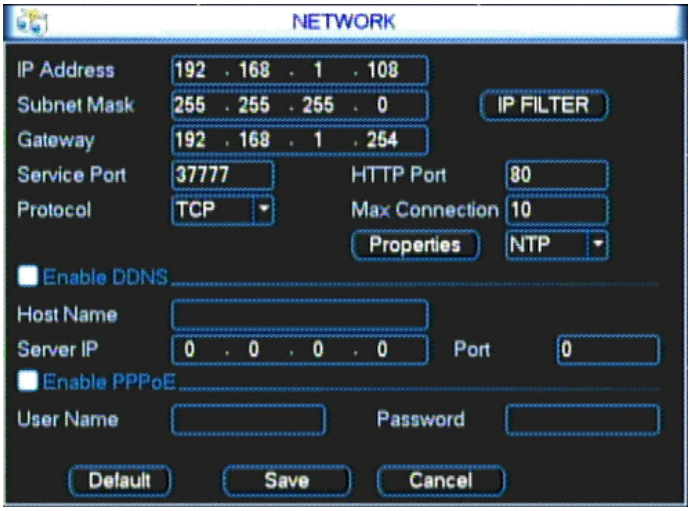
6.1 - Network Menu Overview

First, log into the DVR as described in **3.1 - Logging into the System menu**

Click on 

then

to enter the Network Menu



Networking (cont'd)

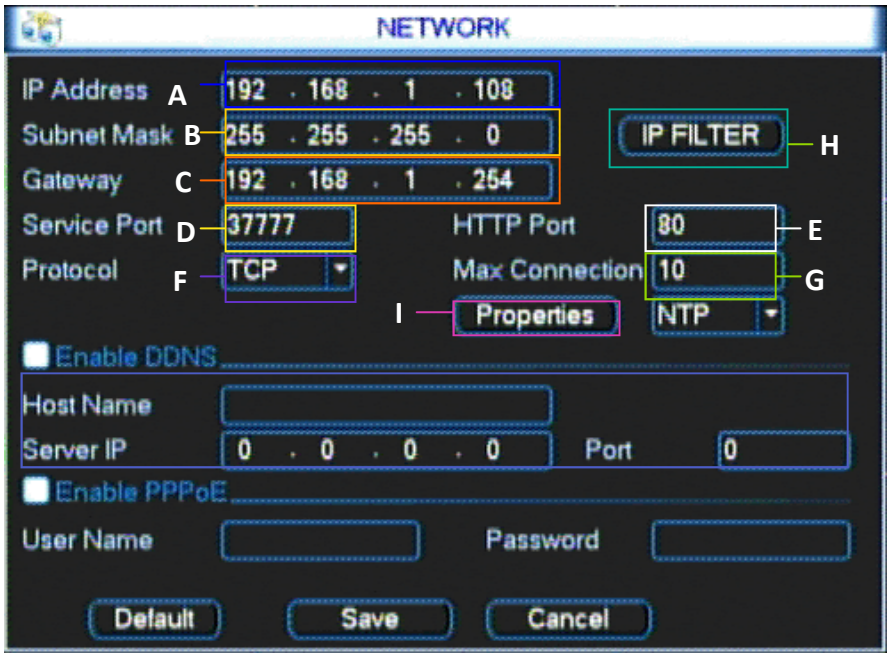


Figure 6.11

A. **IP Address -** This is the local address of the DVR, this number should be unique and no other device on your network can have this IP otherwise an IP conflict occurs
B. **Subnet Mask -** Defines the subnet that is being used on the local network, wherever there is a "*255,*" both the IP and Gateway should match in the corresponding fields
C. **Gateway -** Also known as the "*default gateway,*" this address and your router's IP should match

Note

For more information on how you determine what the IP, subnet and gateway need to be, please see 6.2 - Networking 101

D. **Service Port -** This port is responsible for all video and configuration data transmission over the network interface, this can be changed if needed

E. HTTP Port - This port is responsible for loading the web interface in Internet Explorer.

Note

If changing from pot 80 to a different port, you must type the full address along with the port number (ex: http://192.168.1.108:81)

F. **Protocol -** Protocol used for web viewing

G. **Max Connection -** Defines the maximum amount of users that can be connected to the DVR simultaneously

H. **IP Filter -** Input which IPs are allowed connection to the DVR (Figure 6.12)

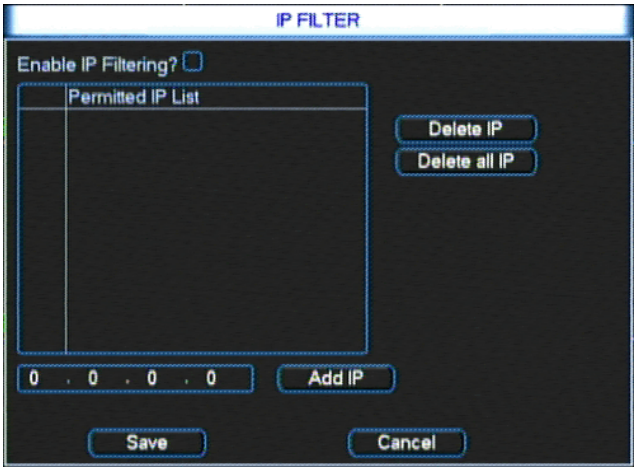


Figure 6.12

I. **NTP -** Network Time Protocol updates the system's time by connecting to an external NTP server (Figure 6.13)

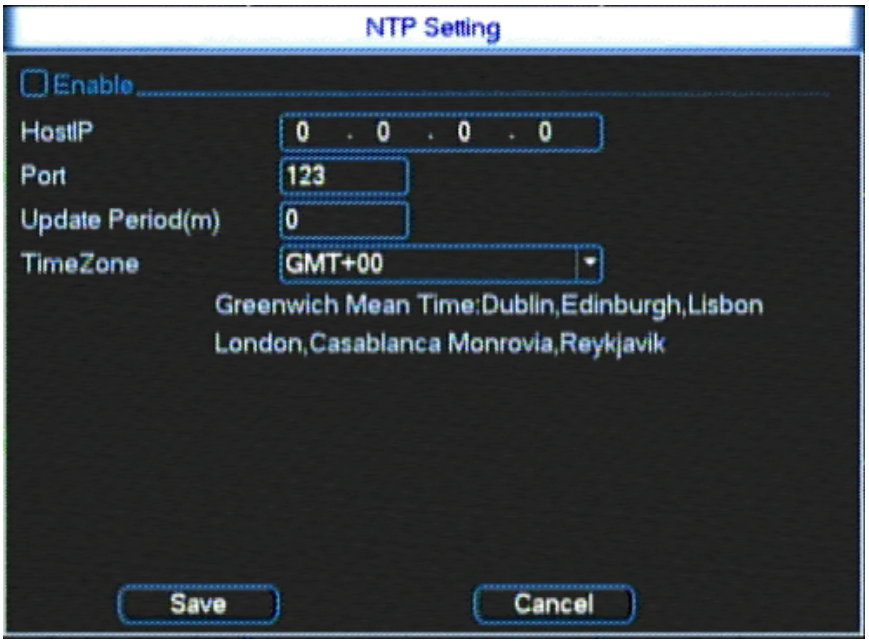


Figure 6.13

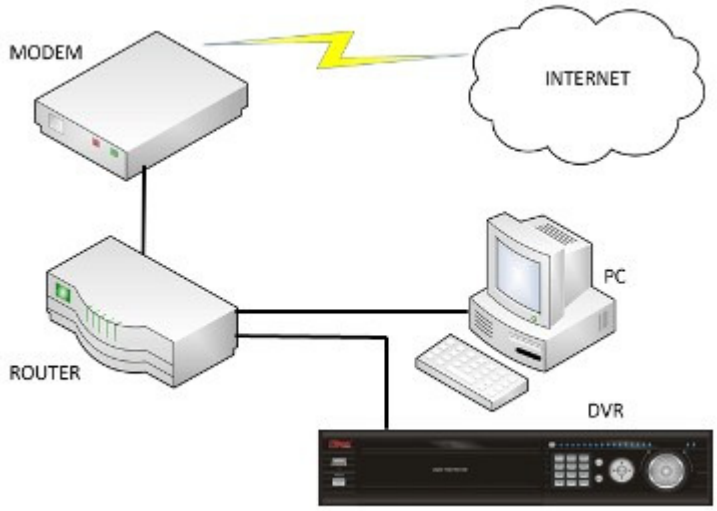
Enable DDNS - Used to connect to the DVR using a Dynamic Domain Name Server, An external server is required for this function

Enable PPPoE - You can use this feature to configure the DVR directly to a DSL provider's modem

6.2 - Networking 101

This section teaches you the basics of networking. The example is a modem, router, PC and DVR

Identify Your Network

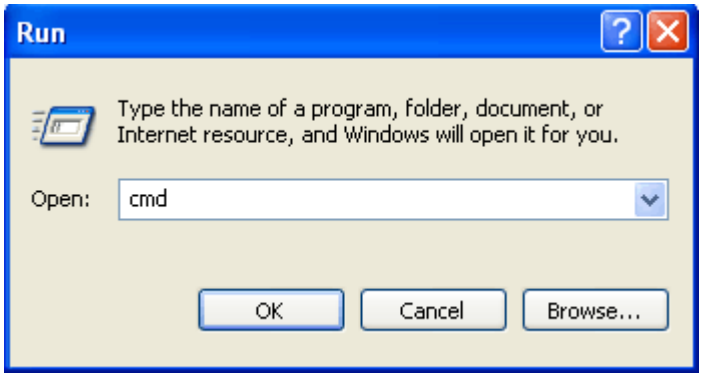


Networking requires that you know and understand all the devices that are on or "attached" to your network. This illustration is a perfect example of how a beginner first interprets their network. Each of these devices has an IP, subnet mask and gateway it uses to send and receive information

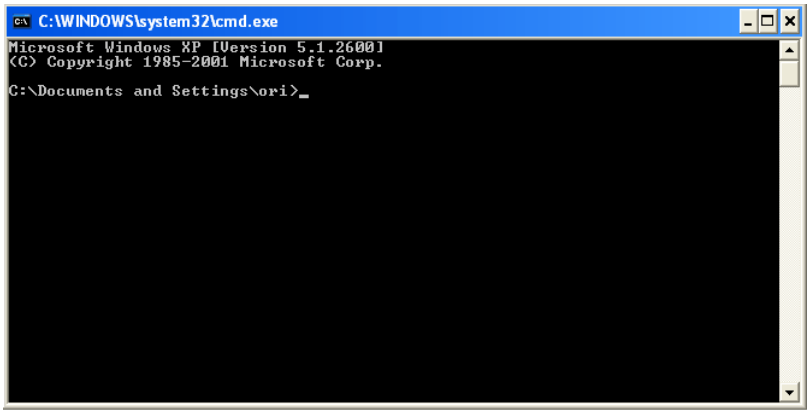
Step 1 - Using the "ipconfig" command in windows will help us determine what the gateway is. The gateway or "Default Gateway" is also the IP address of the router. Before continuing, make sure you are on a PC that is connected to the same router as your DVR

Continued on next page

In Windows XP go to **Start>Run** (Vista users press and hold the Windows key + R) and type “cmd” , this will bring up the run dialog



Step 2 - In the run dialog type the letters “cmd” and click **OK.** The command prompt screen will appear



Step 3 - Type “ipconfig” and press Enter. The information displayed tells us a lot about the network we are using (Figure 6.24)

Networking 101 (cont'd)

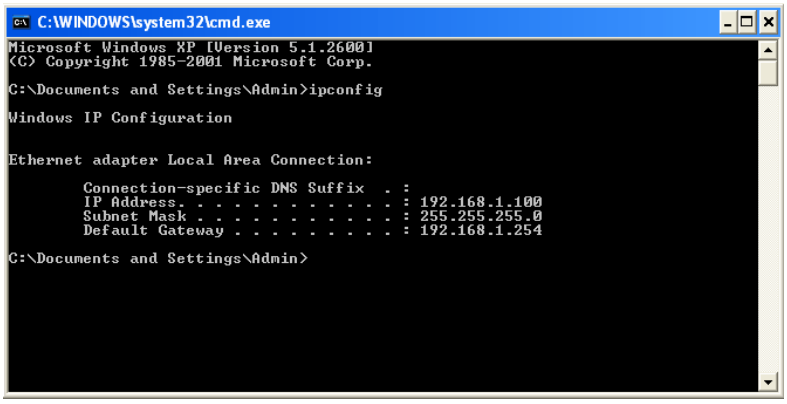

C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.
C:\Documents and Settings\Admin>ipconfig
Windows IP Configuration
Ethernet adapter Local Area Connection:
Connection-specific DNS Suffix . :
IP Address. . . . . : 192.168.1.100
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 192.168.1.254
C:\Documents and Settings\Admin>

Figure 6.24

IP Address - This is the IP address that the router automatically assigned to the PC. You want to make sure that the DVR does not use the same IP as this or any other PC on the same network

Subnet Mask - Use the same subnet in the DVR's settings

Default Gateway - This is the router's IP address, the DVR's gateway should be the same

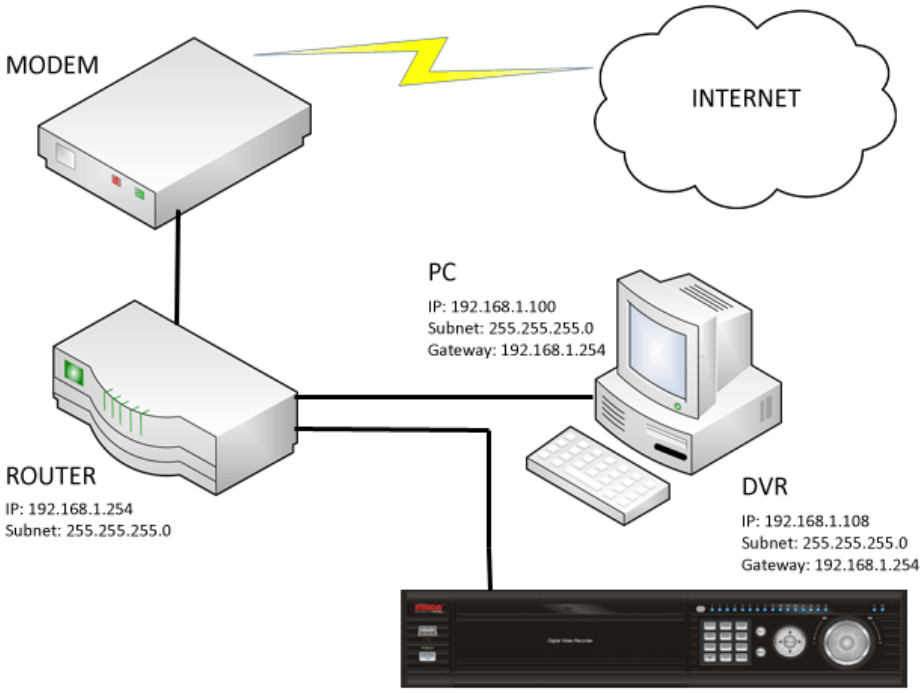
Step 4 - With this information we can go back into the DVR and configure the network settings (Figure 6.11)

Note

The IP address we assigned (*192.168.1.108*) because there is no conflict with this address and another device on the same network

Networking 101 (cont'd)

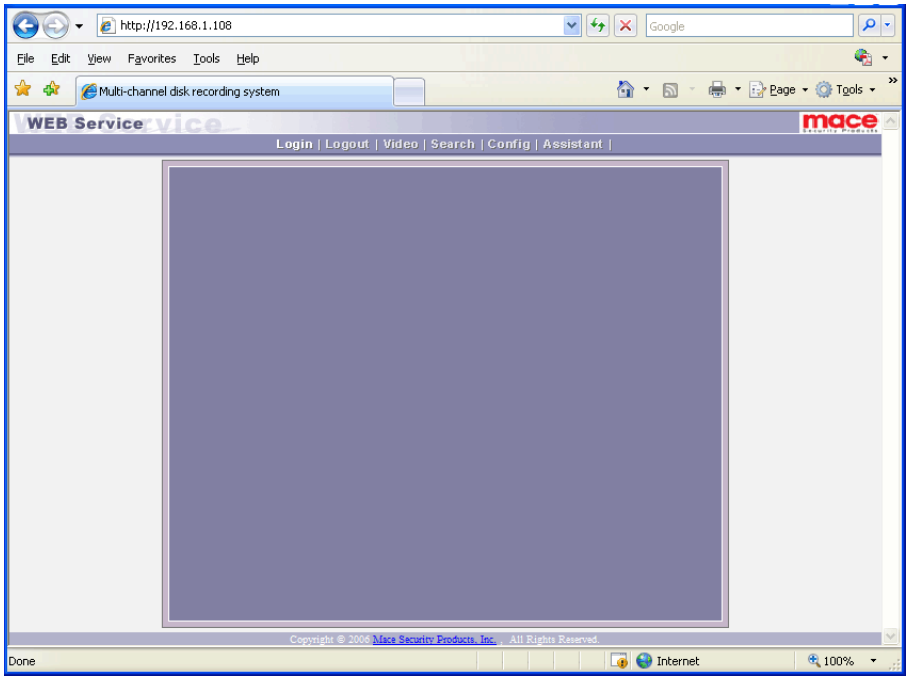
Now that the DVR has been configured correctly, let's take a look at how our local network can now be interpreted



Note

The modem's IP address is not mentioned because the modem should be in "bridged mode" and therefore the modem will not have a local IP

Step 5 - Test the connection by using Internet Explorer, type the IP address



6.3 - Port Forwarding/NAT

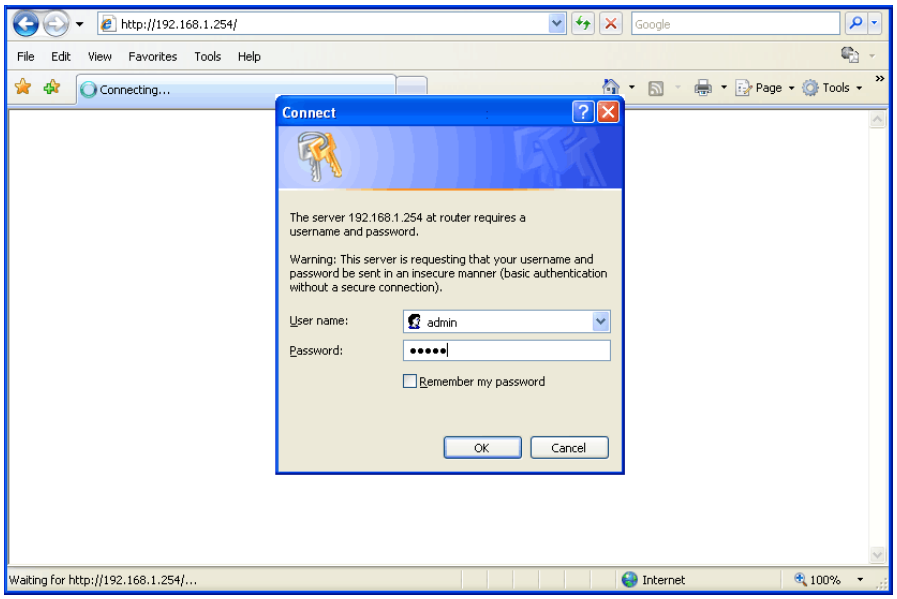
This section will explain port forwarding ion a basic router, for detailed information on your router, please visit www.portforward.com/routers

Port forwarding is a setting used in routers to allow remote access of a network using specific ports

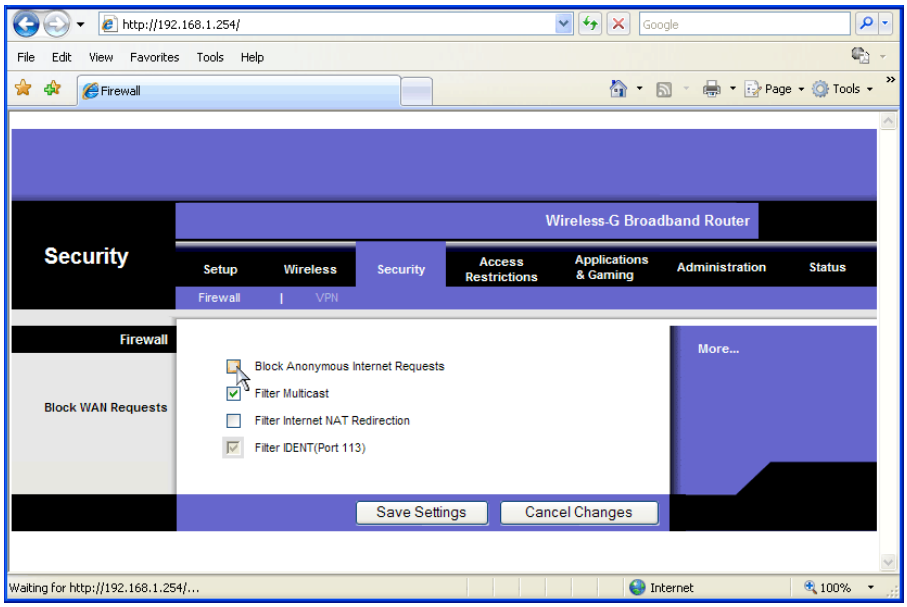
Our DVRs use 2 ports to transmit data, 80 and 37777

These ports can be changed depending on what the network allows, some ISPs (Internet Service Providers) block outbound traffic on port 80

Step 1 - Connect to the router configuration by putting the default gateway in Internet Explorer. Type in the username and password for your router



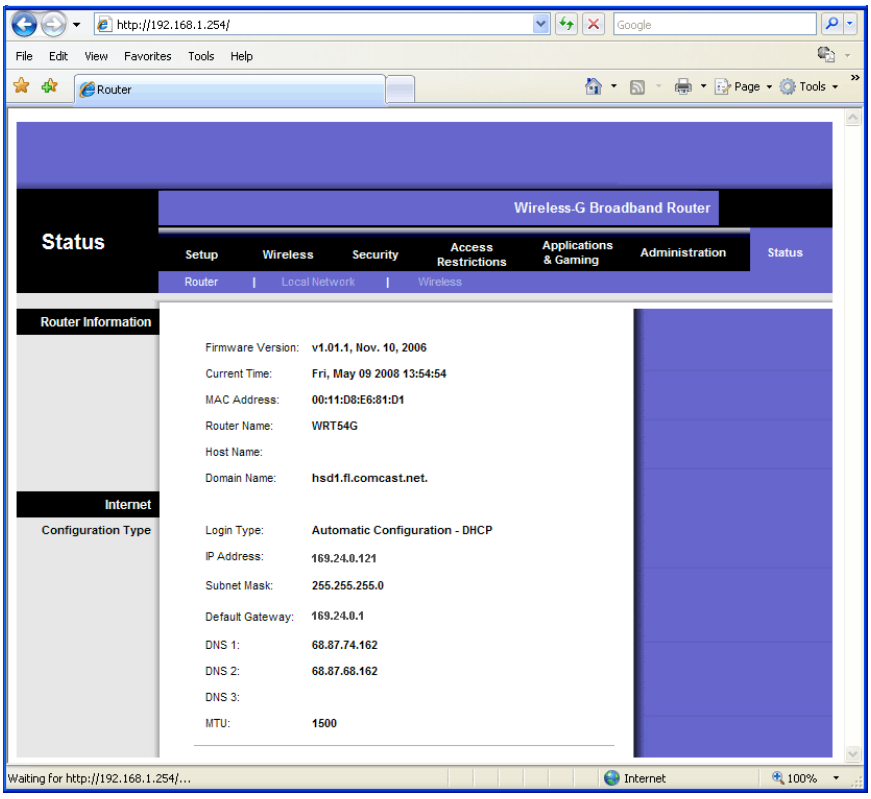
Step 2 - Make sure that all firewalls in the router are disabled, these settings are usually located under the “Security” or “Firewall” menu. Refer to the router’s manual for more information on where this is located. SPI (Stateful Packet Inspection) must also be disabled; this setting is usually found in modem/routers



Step 3 - Find the port forwarding menu in your router, this menu goes by different names like Applications & Gaming, pinholes, virtual server or NAT to name a few. If your router has an “Advanced” menu, it is more likely in this area

Step 4 - Now we can test the connection from outside the local network. Check in your router's "Home" or "Status" page for your internet or WAN IP address. Then you can have some one remotely attempting to connect to that IP using Internet Explorer

The result will be the same as the local test in 6.2 - Networking 101



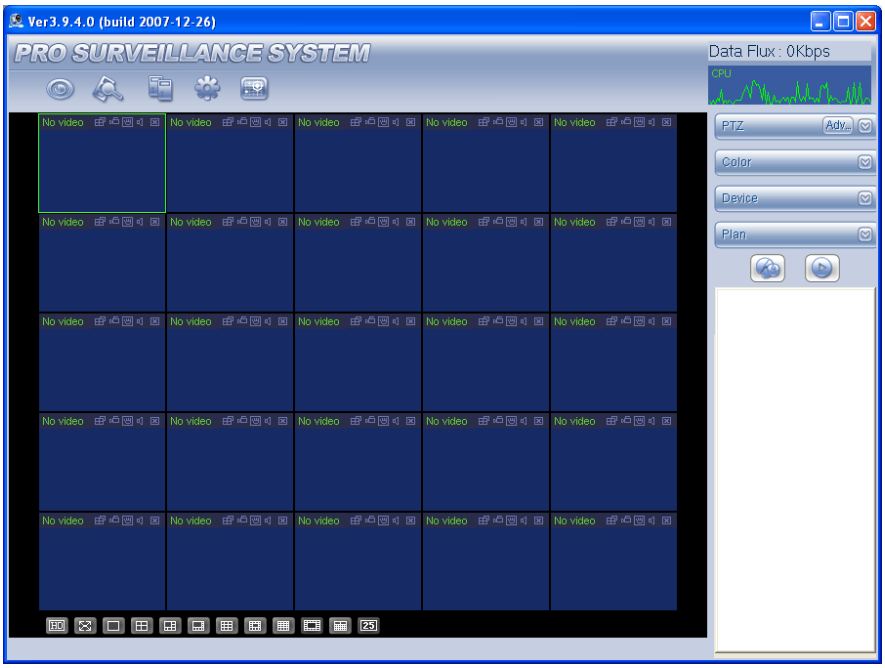
For troubleshooting information see 6.6 - Troubleshooting Network Issues

6.4 - Pro Surveillance System

*The **New** MACE Pro Surveillance System lets you view live video, search and playback files and configure the DVR over the network*

Key Features

- Connect to multiple DVRs
- View up to 25 cameras simultaneously
- Auto-record function with network drive capability



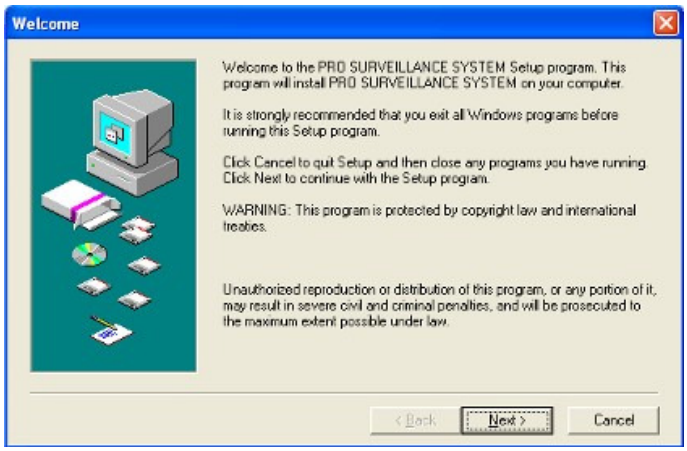
Note

This client software is compatible with the RT3 series DVR, **do not use any other client software as this may cause problems within the settings**

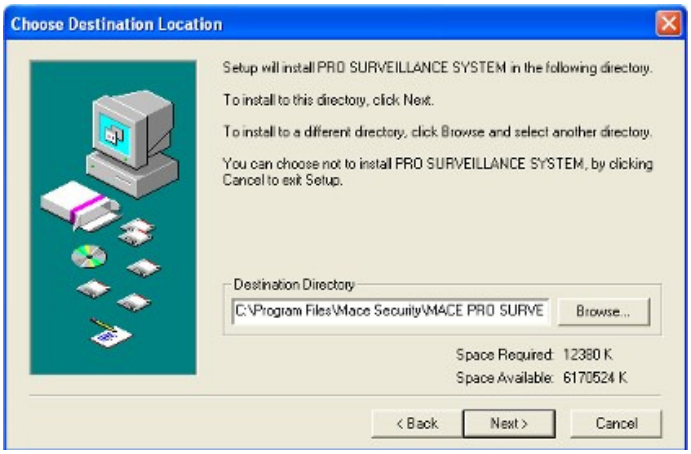
6.4.1 - Pro Surveillance System Installation

Insert the DVR software CD to install the Pro Surveillance System (If you do not have a software CD please contact support@mace.com for a copy of the latest version)

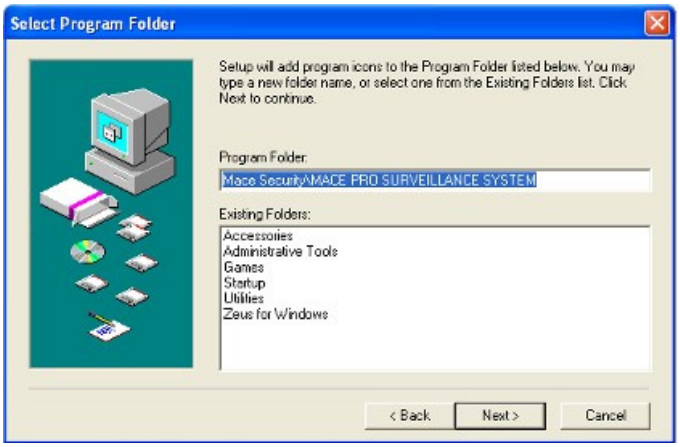
Step 1 - Open the installation file and click next to continue


Welcome
Welcome to the PRO SURVEILLANCE SYSTEM Setup program. This program will install PRO SURVEILLANCE SYSTEM on your computer.
It is strongly recommended that you exit all Windows programs before running this Setup program.
Click Cancel to quit Setup and then close any programs you have running. Click Next to continue with the Setup program.
WARNING: This program is protected by copyright law and international treaties.
Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.
< Back
Next >
Cancel

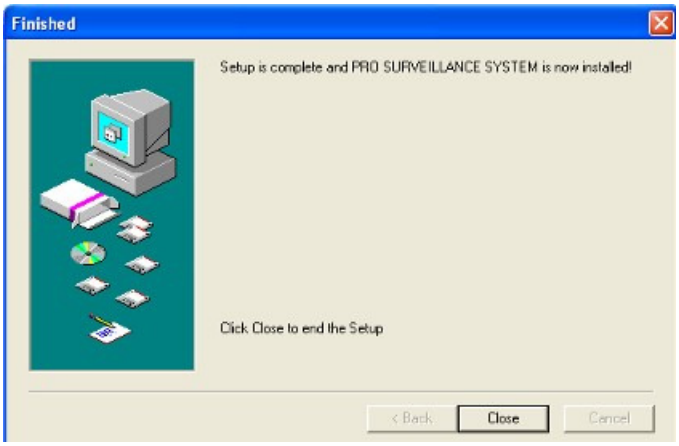
Step 2 - Select the destination installation folder then click next


Choose Destination Location
Setup will install PRO SURVEILLANCE SYSTEM in the following directory.
To install to this directory, click Next.
To install to a different directory, click Browse and select another directory.
You can choose not to install PRO SURVEILLANCE SYSTEM, by clicking Cancel to exit Setup.
Destination Directory
C:\Program Files\Mace Security\MACE PRO SURVE
Browse...
Space Required: 12380 K
Space Available: 6170524 K
< Back
Next >
Cancel

Step 3 - Choose which folder in the Start Menu you would like the program


Select Program Folder
Setup will add program icons to the Program Folder listed below. You may type a new folder name, or select one from the Existing Folders list. Click Next to continue.
Program Folder:
Mace Security\MACE PRO SURVEILLANCE SYSTEM
Existing Folders:
Accessories
Administrative Tools
Games
Startup
Utilities
Zeus for Windows
< Back
Next >
Cancel

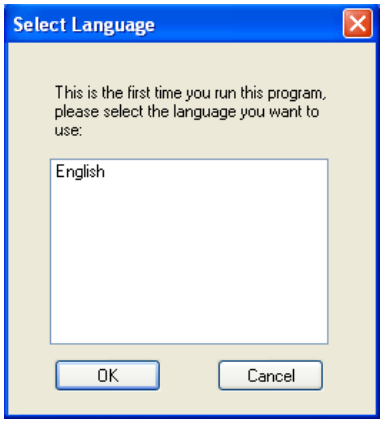
Step 4 - Once the installation is complete, click close to exit



6.4.2 - Using the Pro Surveillance System

Once the software is installed, you must first add a device

The program will ask you to select a language for operation



Highlight “English” then click OK to continue

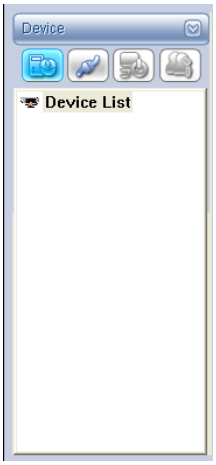
You may be asked to add the program to the Firewall’s allowed programs

Windows Security Alert
To help protect your computer, Windows Firewall has blocked some features of this program.
Do you want to keep blocking this program?
Name: PSS.exe Microsoft
Publisher: Unknown
Keep Blocking
Unblock
Ask Me Later
Windows Firewall has blocked this program from accepting connections from the Internet or a network. If you recognize the program or trust the publisher, you can unblock it. When should I unblock a program?

If you do not allow the program access through the firewall you will have connection issues

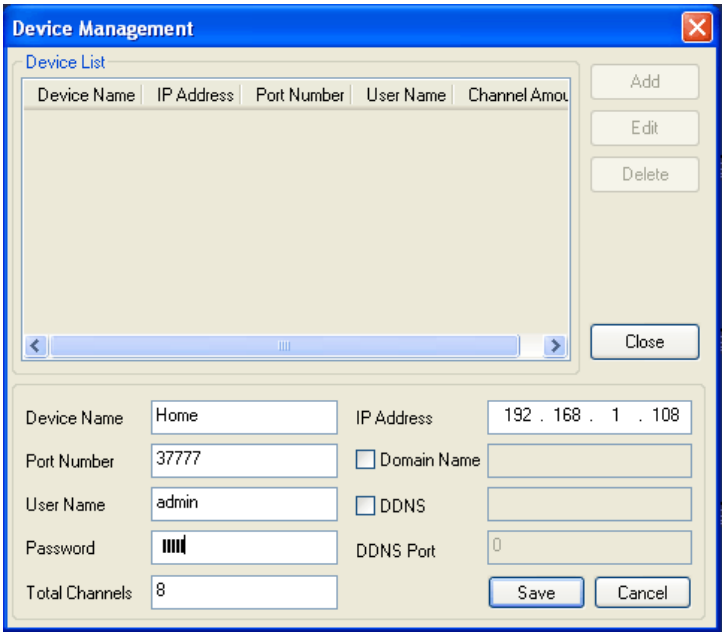
The software will require you to login, the default username and password is “admin” (You can change this password in the system, this is only for accessing the software)

Click the Device Management icon to add a device

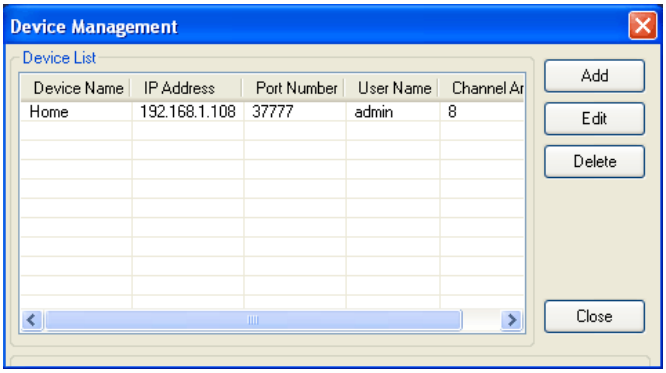


Using the Pro Surveillance System (cont'd)

Enter the DVR's login information, then click "Save" to add to the list

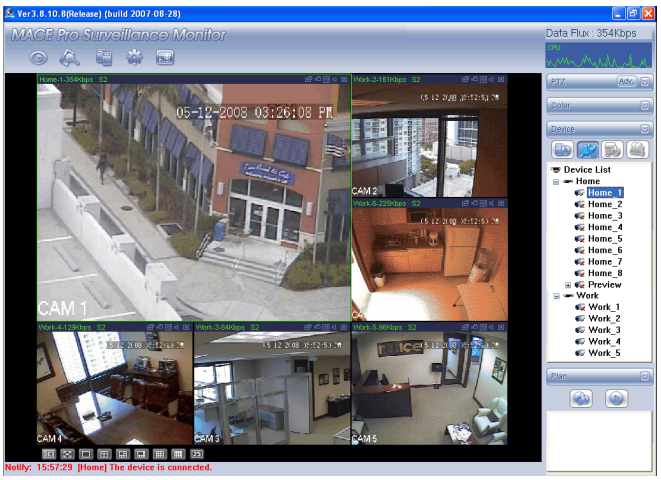


After saving you will see the DVR in the Device List, close to continue



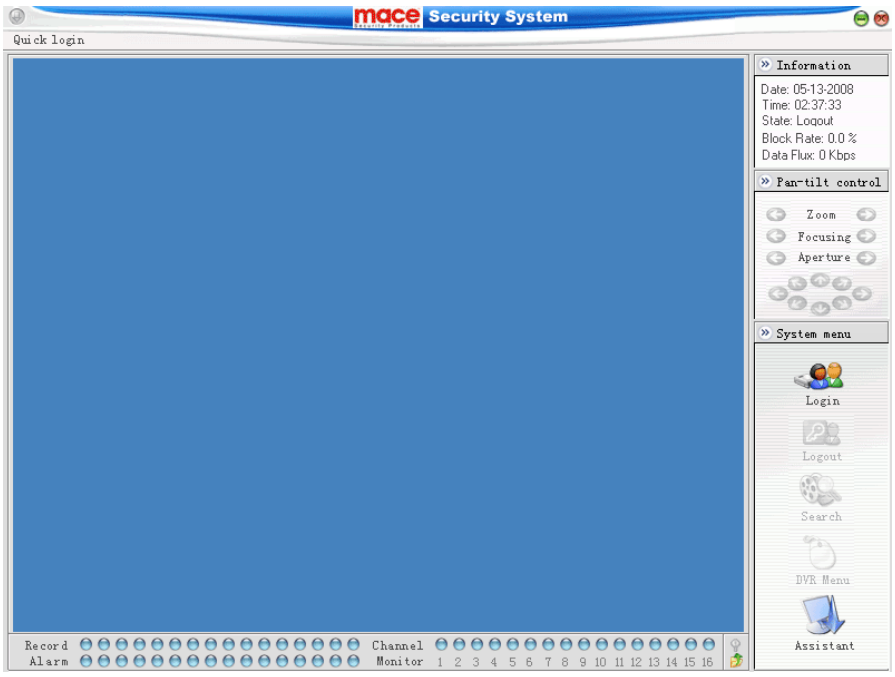
Highlight the DVR in the list then click the Connect/Disconnect button

Click on an empty screen division, then double-click on any of the available cameras in the list to display. The system will support up to 25 simultaneous cameras from any number DVRs (Based on CPU speed)



6.5 - Remote Client

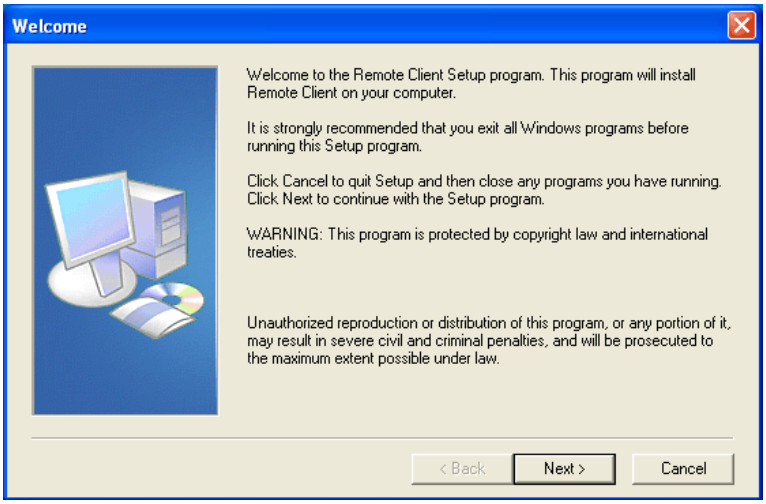
The Remote Client software is not compatible with the RT3 series DVR, using the software may cause issues with the DVR's settings



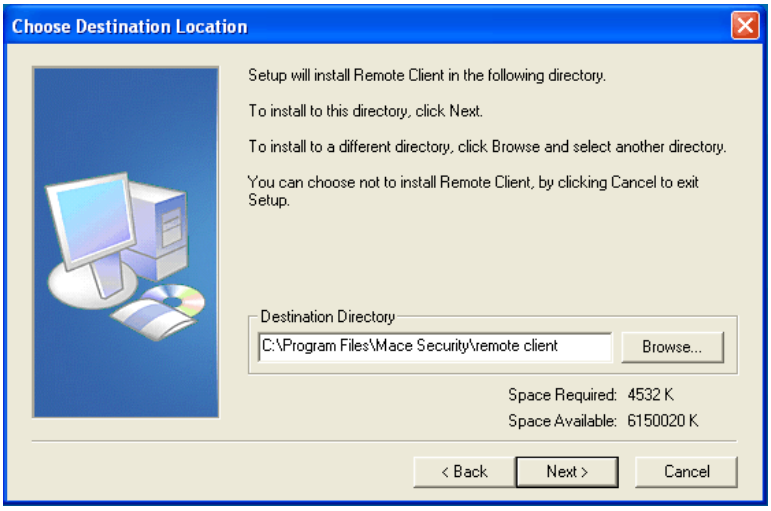
With the remote client you can easily store multiple DVRs for easy access, searching video and changing settings. The latest version is available on our website for download at www.macepro.com/support/downloads

6.5.1 - Remote Client Installation

Step 1 - Open the installation file and click next to continue


Welcome
Welcome to the Remote Client Setup program. This program will install Remote Client on your computer.
It is strongly recommended that you exit all Windows programs before running this Setup program.
Click Cancel to quit Setup and then close any programs you have running. Click Next to continue with the Setup program.
WARNING: This program is protected by copyright law and international treaties.
Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.
< Back
Next >
Cancel

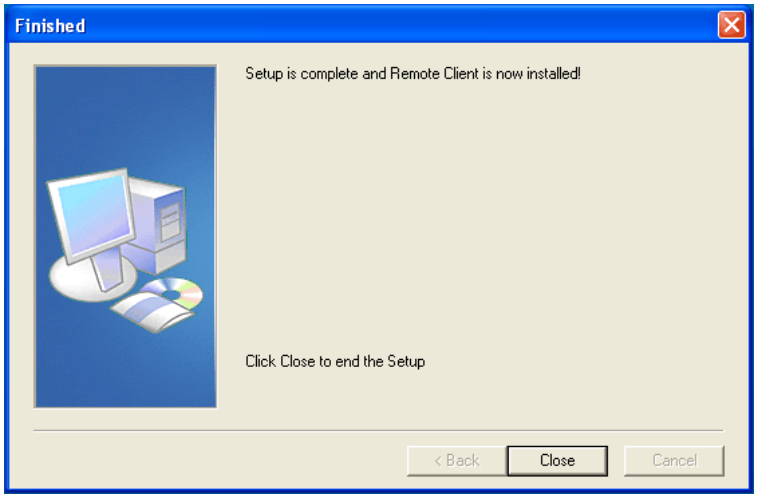
Step 2 - Select the destination folder and click next


Choose Destination Location
Setup will install Remote Client in the following directory.
To install to this directory, click Next.
To install to a different directory, click Browse and select another directory.
You can choose not to install Remote Client, by clicking Cancel to exit Setup.
Destination Directory
C:\Program Files\Mace Security\remote client
Browse...
Space Required: 4532 K
Space Available: 6150020 K
< Back
Next >
Cancel

Step 3 - Choose which folder in the Start Menu the program will be located, click next

Select Program Folder
Setup will add program icons to the Program Folder listed below. You may type a new folder name, or select one from the Existing Folders list. Click Next to continue.
Program Folder:
Mace Security\Remote Client
Existing Folders:
Accessories
Administrative Tools
Games
Mace Security
Startup
Utilities
Zeus for Windows
< Back
Next >
Cancel

Step 4 - Installation complete, click close to exit

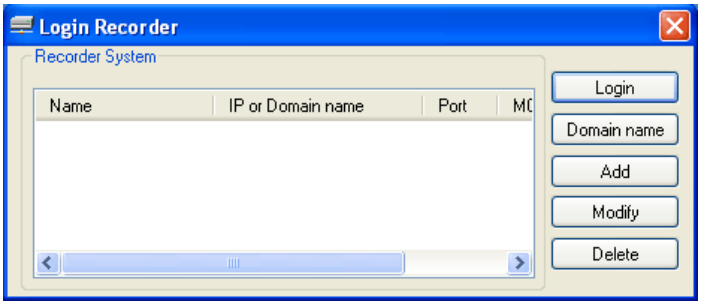


6.5.2 - Using the Remote Client

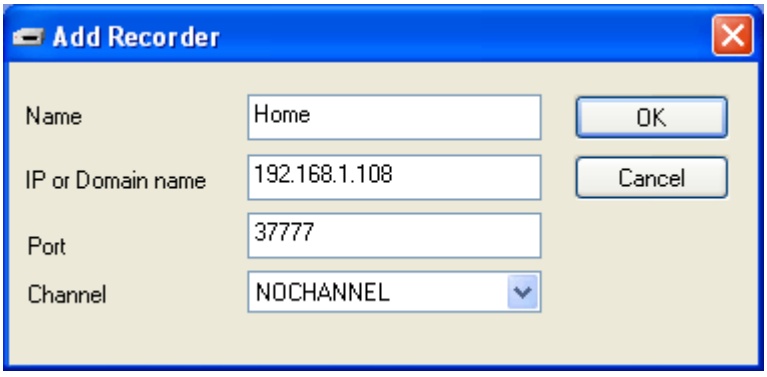
Once the system is installed you must add a device

Click “Login,” select “Network Login” then click OK

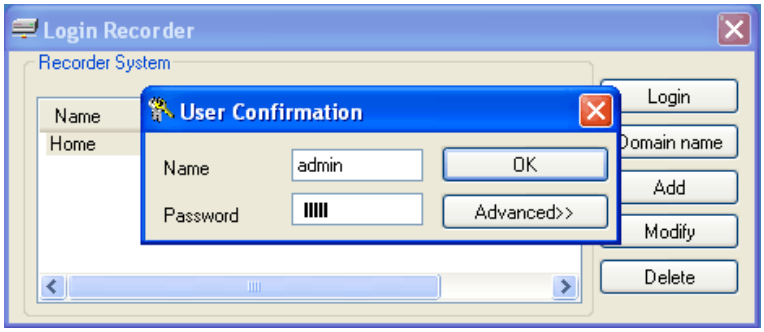
Click on “Add” to add a device



Enter a name for the DVR (user specified), IP Address and Port, by default the port is 37777 (*For more information see 6.1 - Network Menu Overview*) then click OK

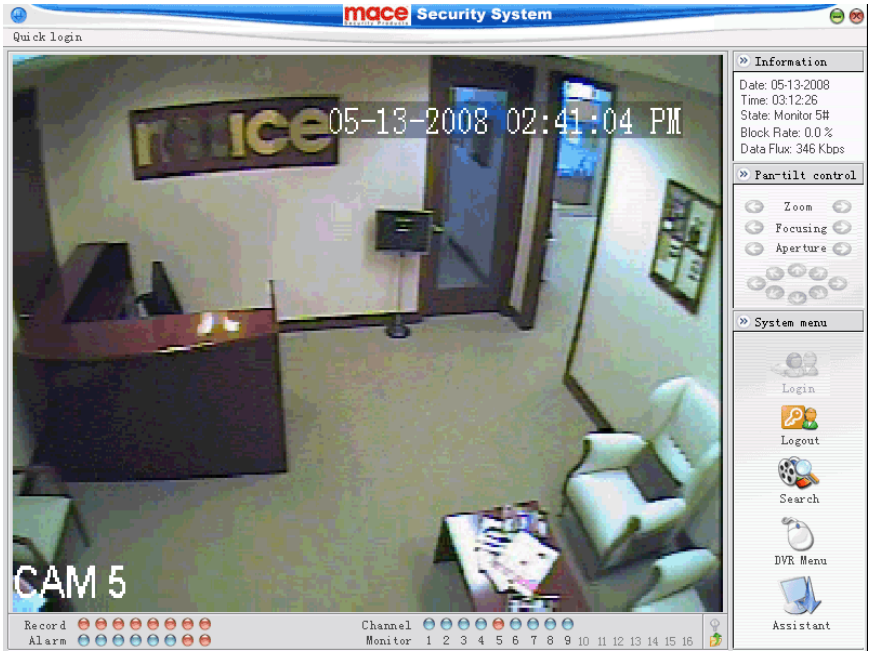


Double-click on the DVR's information to login, entire the login username and password



Using the Remote Client (cont'd)

Click on a channel number below, or Right-click and select a view



6.6 - Troubleshooting

For troubleshooting please contact our technical support @ 1 (866) 392 - **MACE**

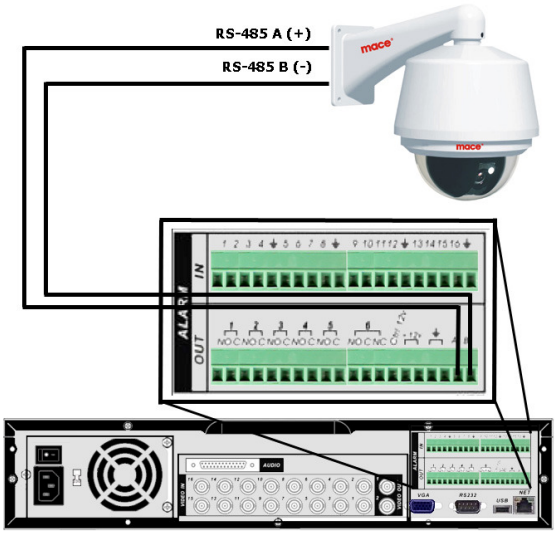
CHAPTER 7

Chapter 7 - PTZ Installation

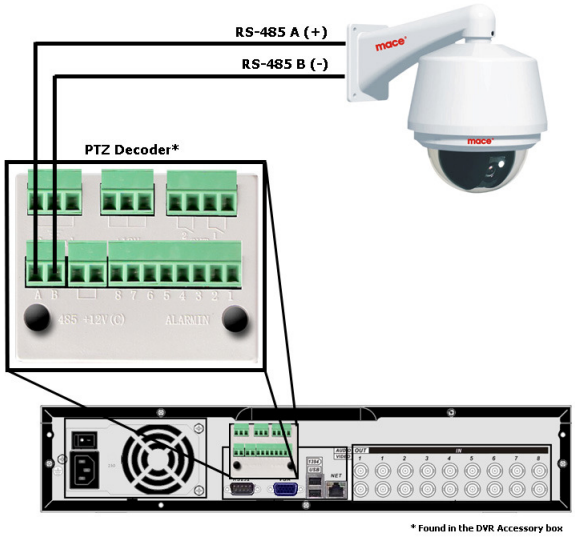
This chapter will provide connection diagrams for all model DVRs, how to control the PTZ using both the DVR and the PTZ Controller, and cover all the features available when using the Mace Protocol

7.1 - Connections

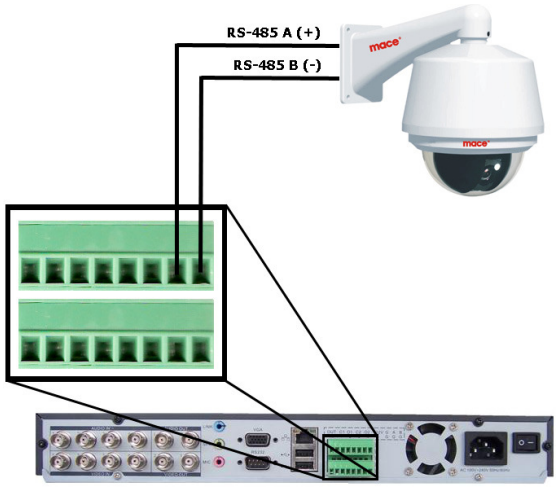
The RT# series, 800HP and 1600HP all have the same type of connection for RS-485 control



The 400HP, 400RT2, 800RT2 and 56MR all use a PTZ decoder for control



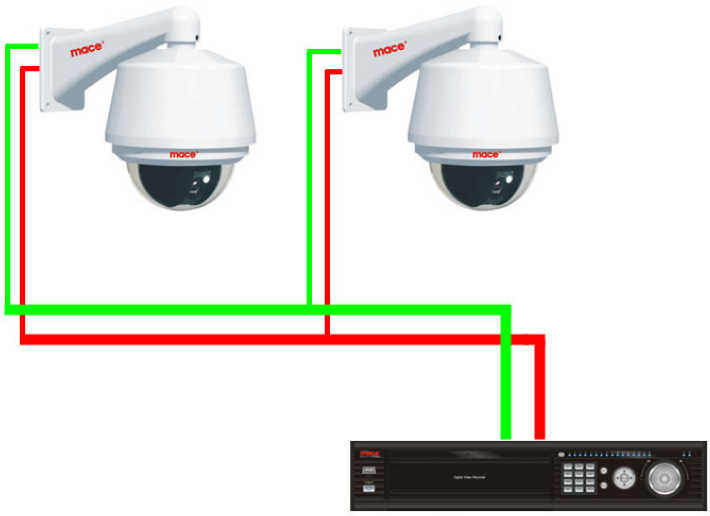
The 400MM is unique in its connection for RS-485 control



Connections (cont'd)

Cable Requirements

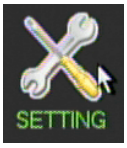
We recommend that you use 24AWG CAT5 shielded twisted pair or better for RS-485 communication from any PTZ to the DVR. The maximum distance you can run without any repeaters is 1,000 meters, or 3,280 feet



7.2 - PTZ Menu Overview

*Before continuing, reboot each PTZ camera you need to configure, during boot up copy the Address, Protocol and Baud Rate for easy configuration**

First, log into the DVR as described in **3.1 - Logging into the System menu**

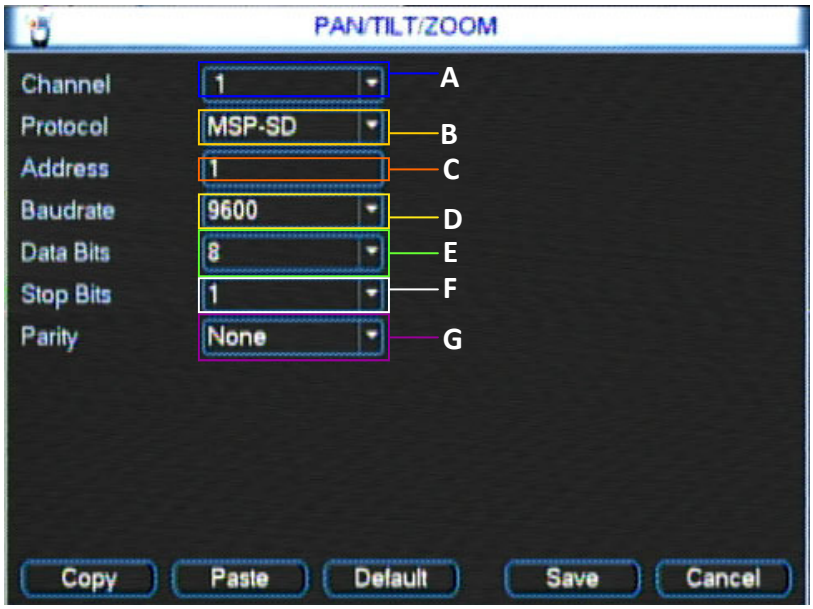
Click on 

then

to enter the PTZ Menu

A. **Channel -** Select the appropriate Channel where the PTZ is going to be displayed

B. **Protocol -** This drop-down list displays all of the available protocols, use the one that is specified during PTZ boot up



C. Address - Input the camera's address*

D. Baud Rate - The speed at which the camera transmits data, measured in bits

E. Data Bits - By default 8, only change this if your installation requires it

F. **Stop Bits -** Default is 1, change if necessary

G. Parity - None by default

Note

If you are using more than 1 PTZ, make sure that each has a unique address to avoid cross-communication

7.3 - PTZ Control

The DVR has 3 different "Control Points" from which you can use the PTZ functions

7.3.1 - Using the DVR's GUI

You can gain control of the DVR from the DVR each of the following 2 ways:

Method #1 - Using the Mouse

Step 1 - Double-click on the desired channel name so that it is full screen

Step 2 - Right-click anywhere on the screen and select "Pan/Tilt/Zoom" from the list

Method #2 - Using the DVR Front Panel (or IR Remote)

Step 1 - Press the appropriate channel number so that it is full screen, or press 9 and scroll up for channels 10-16

Step 2 - Press the "Fn" button and select "Pan/Tilt/Zoom" by pressing "Enter"

From this point on the DVR has several different control screens to work with

Page 1 - Standard Control

Speed Setting - Increasing this number will make the camera more sensitive to PTZ movement (Pan/Tilt/Zoom)

Directional Arrows - You can use the 8-Directional pad to move to the desired position.

Continued on next page

Use the “SIT” feature by pressing the “SIT” button. This allows you to easily highlight an area that you want to zoom in on (Figure 7.34). Additionally, you can do the reverse and zoom out (Figure 7.35)

Figure 7.34

Figure 7.35

Right-click once to return to the previous screen

Note

This feature is only available with the Mace Protocol in our PTZ cameras

PTZ Control (cont'd)

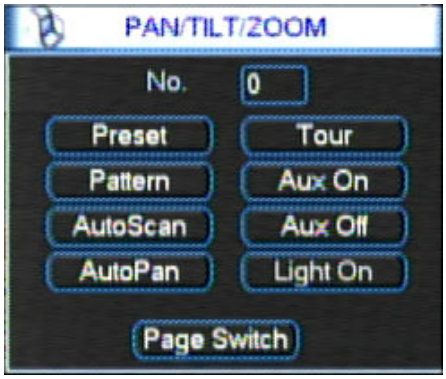
Zoom, Focus and Iris - Adjusts these settings in the camera

Set - Brings up a menu from which you can add presets, add presets to tours and patterns along with a border (left/right) control for easy preset assignment

Click on "Page Switch" to view the next page of functions

Page 2 - Preset Control

Continued on next page



No. - Enter the number you wish to call (Preset, Tour, Pattern)

Preset, Tour and Pattern - Calls the number specified by clicking on each function

Aux On/Off - If you are using the PTZ camera's AUX you can enable/disable it from this screen

AutoScan/Pan - Starts the default Scan or Pan function

Page 3 - PTZ Menu Control*

PTZ Control (cont'd)

Enter/Exit Menu - Enter or exit the PTZ menu

Directional Arrows - Allows you to browse and change setting sin the PTZ menu

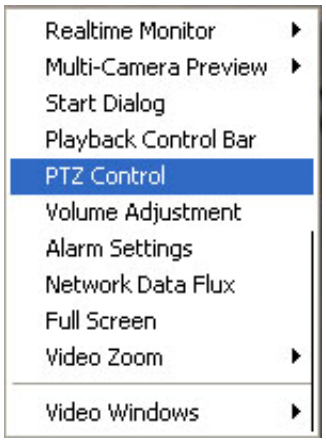
Esc/Enter - Esc will return you to the previous page in the PTZ menu, Enter confirms a settings change

Note
These functions use the default protocol commands, some functions may differ depending on the protocol used. The Mace protocol supports all functions

7.1.2 - Using Internet Explorer

You can remotely control your PTZ camera using Internet Explorer

After connecting to the DVR, full screen the desired channel, then Right-click on the screen and select "PTZ Control"



Continued on next page

This will bring up the PTZ control window (Figure 7.40), from this window you have full control of the PTZ camera. Similar to the DVR's control point, you can use the "Set" function to program presets, tours etc (Figure 7.41)

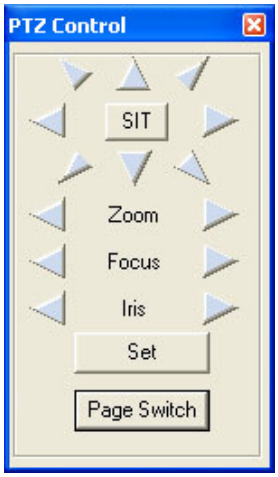


Figure 7.40

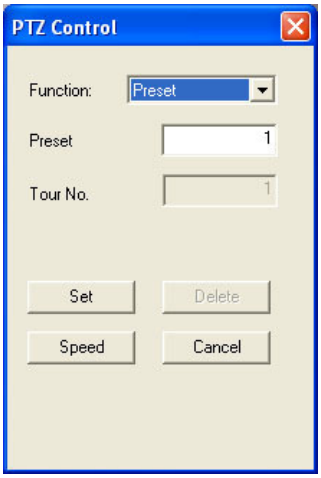
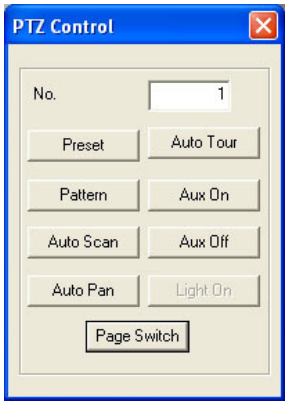


Figure 7.41

Clicking "Page Switch" will bring up a second page of functions, here you can call pre-sets and start/stop tours along with scans



7.3.3 - Using Pro Surveillance System

The Pro Surveillance System software allows you to easily control PTZs from multiple DVRs

After connecting to the DVR, full screen the desired channel then click on the "PTZ" bar to open the PTZ control menu (Figure 7.44)

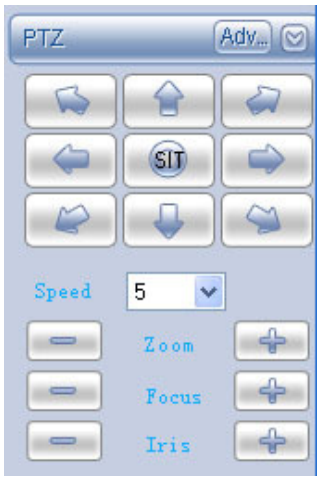


Figure 7.44

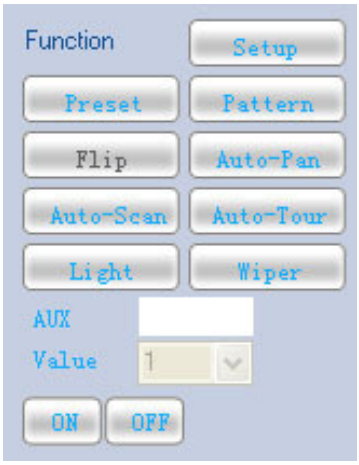


Figure 7.45

By clicking on you will open the Advanced PTZ functions below the control menu (Figure 7.45)

Note

You can only enter the camera's menu using the DVR's control point

7.4 - Troubleshooting PTZ Issues

Common PTZ issues are no control, constant rebooting or video loss. Troubleshooting these issues requires a systematic approach. Below is a simple step-by-step guide that solves most of these issues

There are 5 major factors that should be considered

1) Bad Addressing
2) Wrong Protocol
3) Incorrect Baud Rate
4) Insufficient cable gauge
5) Wrong power supply

Step 1 - Reboot Camera (Initial Screen)

Reboot the camera by temporarily removing the power source and then rebooting. During camera start up, record the information shown on this screen

Verify that the following information matches in the DVR's configuration: **Address, Baud Rate and Protocol.** If changes need to be made in the camera's settings, check the dipswitch settings in the camera's manual. A reboot is required for the changes to take into effect

Step 2 - Check Polarities

Verify that the corresponding RS-485 positive (+) and negative (-) connections are in place. The maximum cable distance for control is 1,000 meters or 3,280 feet using CAT5

Step 3 - Verify Power

Verify that the power supply being used is using the proper current (24VAC or 12VDC) ahd has the correct Amps (or VA). Using the wrong power supply normally causes these symptoms:

- No Video
- Video but no control (Especially if running 12V to a 24V camera)
- Reboots during movement
- Constantly rebooting
- Motor Failure (Pan or Tilt not working)

Step 4 - Verify cabling

Use the proper gauge cable (AWG) using the chart below for reference

12V / 24V	Consumption	50'	100'	150'	200'
12V	Up to 500mA	20	18	18	16
12V	Up to 1 Amp	18	16	14	14
12V	Up to 2 Amp	16	14	12	10
24V	Up to 10VA	20	20	18	18
24V	Up to 20VA	18	18	16	14
24V	Up to 40VA	16	14	14	12
24V	Up to 50VA	16	14	12	10

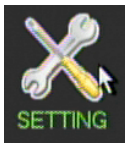
CHAPTER 8

Chapter 8 - Other Settings

This chapter discusses Display, Motion Detection and RS-232 Settings

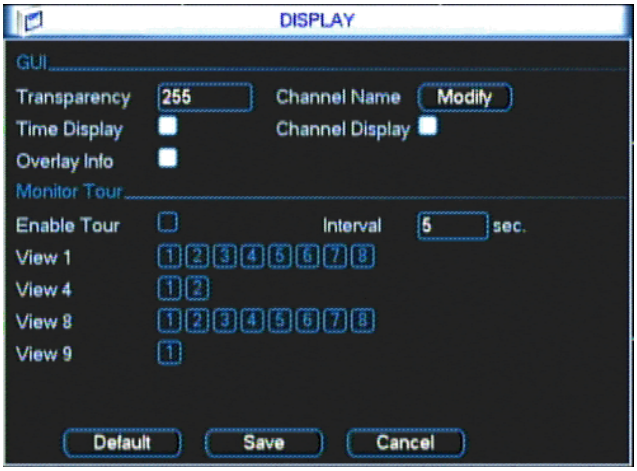
8.1 - Display

First, log into the DVR as described in **3.1 - Logging into the System menu**

Click on 

then

to enter the Display menu



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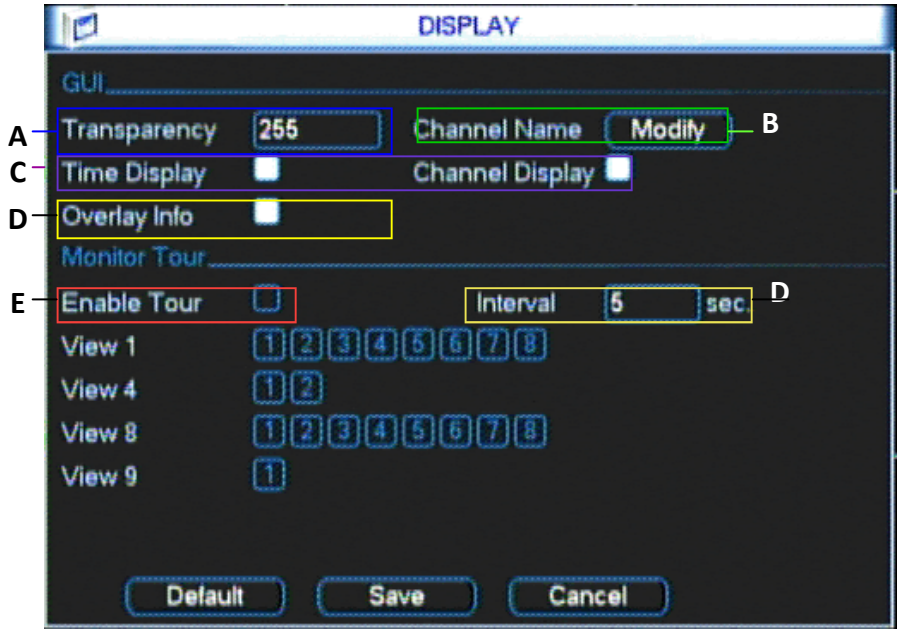


A. **Transparency -** Select the level of transparency for the menu, with ranges from 128 - 255, with 128 being the most transparent

B. **Channel Name -** Modify the channel names by clicking on

and then using the mouse you can modify each channel's name (Figure 8.12)

C. **Time/Channel Display -** Enable or disable system time and channel names from being displayed

Note

This does nt affect the recorded video file's channel and date stamp

Other Settings (cont'd)

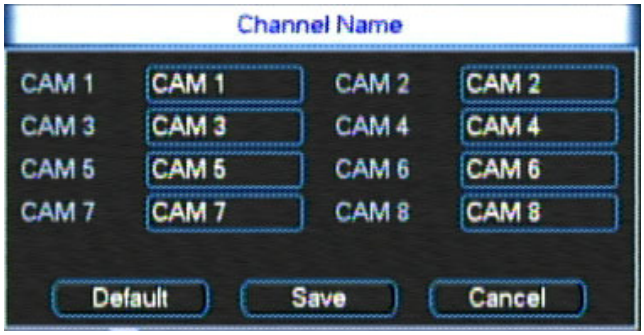


Figure 8.12

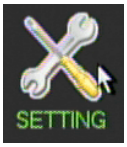
D. **Overlay Info -** Enables or disables the overlay info from DVR display

E. **Enable Tour -** Enabling this will perform a tour of the channel views selected

F. **Interval -** The amount of dwell time between every selected tour view

8.2 - Motion Detection

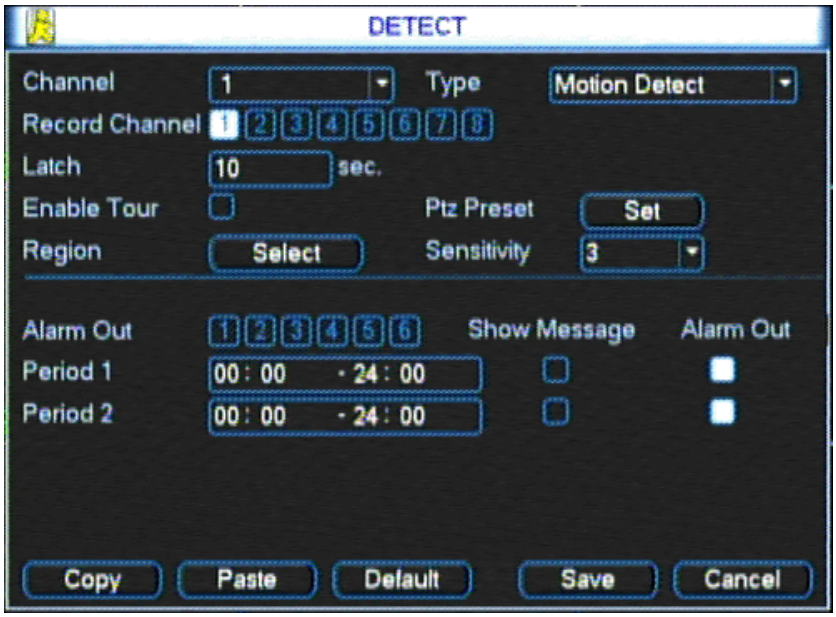
First, log into the DVR as described in **3.1 - Logging into the System menu**

Click on 

then

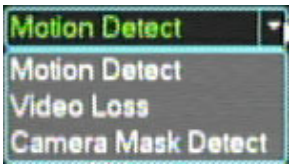
to enter the Motion Detection menu

Continued on next page



Channel - Select an individual channel or "All"

Type - There are 3 different types of recording triggers: "Video Loss" will start recording on multiple channels when video is completely lost, "Mask Detect" will start recording on multiple channels when the DVR senses a camera is being covered, will "Motion Detection" starts based on light and pixel change, depending on sensitivity



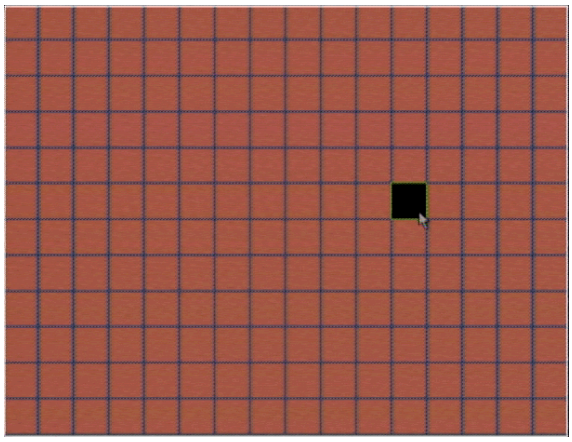
Other Settings (cont'd)

Latch - The amount of time (in seconds) that the DVR will trigger recording once motion Is detected. Once this amount of time passes with no motion detected, the DVR Shuts down recording

Enable Tour - Elect this function if you would like to have the DVR automatically full Screen the channel when motion is detected

PTZ Preset - If this channel has a PTZ configured, you can select a preset be called when motion is detected

Region - Highlight the region that you want to trigger motion, any motion detected outside the region will not be recorded



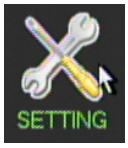
Sensitivity - The higher the sensitivity, the less motion is required to trigger recording

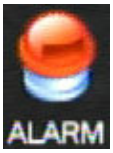
Alarm Out - Allows you to set triggers on connected alarm devices

Period 1/2 - Specifies up to 2 different periods during with alarm devices will be used

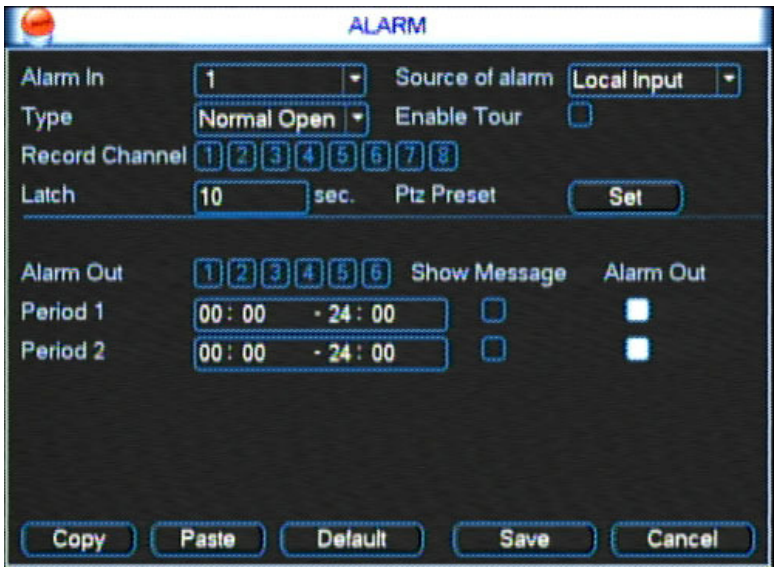
8.3 - Alarm I/O

First, log into the DVR as described in **3.1 - Logging into the System menu**

Click on 

then 

to enter the Alarm menu



Other Settings (cont'd)

Alarm In - Selected which alarm input you would like to configure

Source of Alarm - Choose between a local and net input

Type - "Normal Open" or "Normal Close"

Enable Tour - This automatically full screens the channel when an alarm is triggered

Record Channel - The system will start recording the specified channel

Latch- The duration of the alarm when triggered

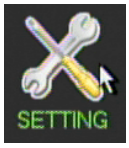
PTZ Preset - Have a preset be called on any installed PTZ camera

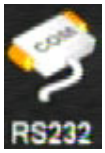
Period 1/2 - Specifies up to 2 different periods during with alarm devices will be used

Continued on next page

8.4 - RS-232

First, log into the DVR as described in **3.1 - Logging into the System menu**

Click on 

then 

to enter the RS-232 menu

Function - **Select the function of the RS-232 connection of the DVR, there are multiple settings including “Keyboard "which is used when controlling the DVR with the MSP-KBD controller**

Baud rate - **The speed at which data is sent and received**

Data Bits - 8 by default, only change if installation requires it

Stop Bits - 1 by default, change if necessary

Parity - Non by default

CHAPTER 9

Chapter 9 - Advanced Settings

This chapter will cover many of the advanced settings in detail

9.1 - HDD Management

First, log into the DVR as described in 3.1 - Logging into the System menu

Click on

then

to enter the menu

Continued on next page

IDE - Displays all the available IDE channels on the DVR

Master - An "O" is displayed where there is a working drive in the system, Master means that the drive is set as the master on the IDE channel

Slave - Slave means that there is a drive configured as a slave on the same IDE channel as a Master

Note
A defective drive will show an "X"

Alarm Set - You can set an alarm for when no disk is found, disk errors, or disk space is low

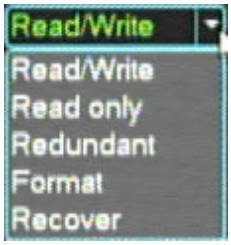
Alarm Release - Turns off any HDD related alarm after being triggered

Advanced Settings (cont'd)

HDD No. - Select any available hard drive from the drop-down list

Set to - This allows you to assign different drive functions like:

⇒ **Read/Write -** Drives set to this setting will store new video and overwrite when necessary
⇒ **Read only -** Drive will let you search but does not store any new video
⇒ **Redundant -** Sets the drive as "RAID" when used with the "Extr Stream" function in Encode
⇒ **Format -** Erases all video on selected drive, click Execute to perform the action
⇒ **Recover -** Attempts to recover a bad hard disk



Type - Displays drive function

Status - Should say "Normal" unless there is some error

Capacity - The total drive capacity

Record Time - Shows the available search times on he disk

9.2 -Alarm Output

First, log into the DVR as described in 3.1 - Logging into the System menu

Click on

then

to enter the Alarm Output menu

This screen shows you which Alarm Outputs are being used

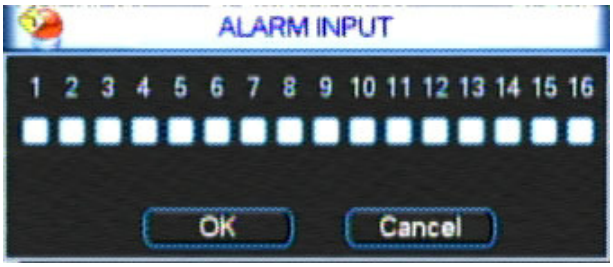
9.3 - Alarm input

First, log into the DVR as described in 3.1 - Logging into the System menu

Click on

then

to enter the Alarm Input menu



This screen displays which channels have activated alarm inputs

9.4 - Manual Record

First, log into the DVR as described in 3.1 - Logging into the System menu

Click on

then

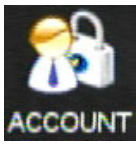
to enter the Manual Record menu

Choose between Schedule or Manual Start/Stop Recording

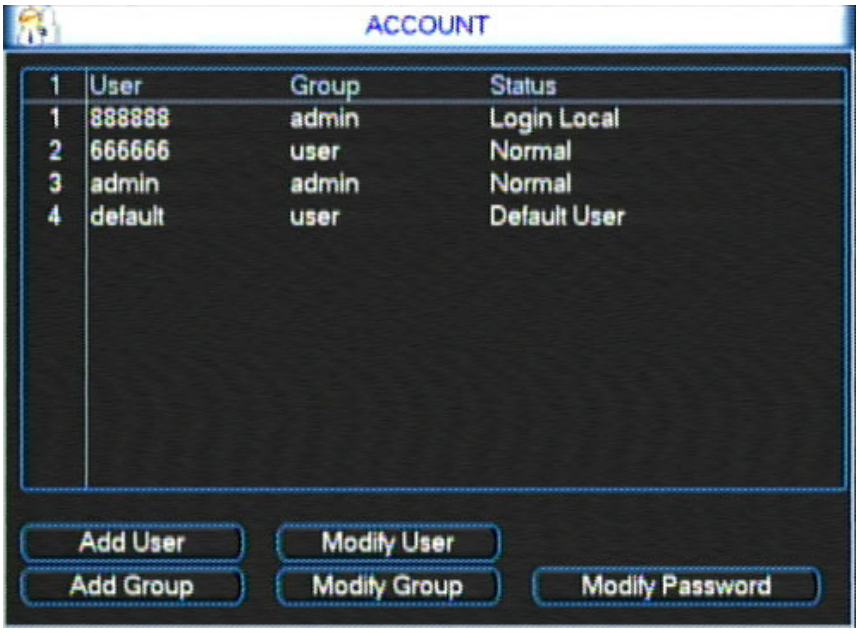
9.5 - Accounts

First, log into the DVR as described in 3.1 - Logging into the System menu

Click on

then 

to enter the Accounts menu



Add User - Add new users to the system and set the desired permissions (Figure 9.51)

Add Group - Create new groups in the system and give them specific permissions (Figure 9.52)

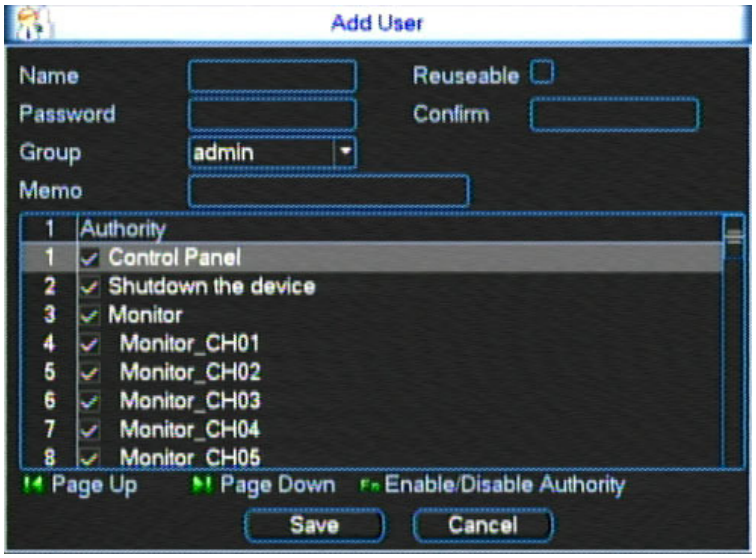


Figure 9.51

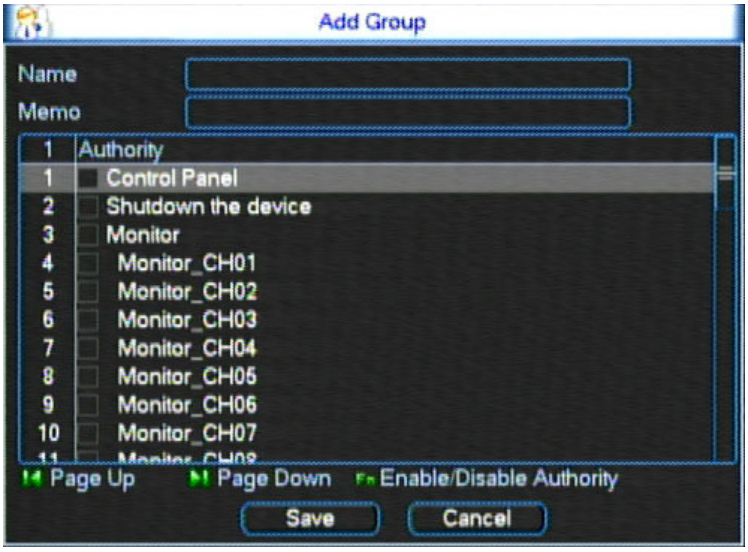


Figure 9.52

Modify User - Change user permissions and what group they are in

Modify group - Change group permissions

Advanced Settings (cont'd)

Modify Password - Use to change account passwords

9.6 - Auto Maintenance

First, log into the DVR as described in 3.1 - Logging into the System menu

Click on

then

to enter the Maintenance menu

The auto maintenance feature can perform a scheduled reboot of the system once a week to ensure system stability, you can also set the DVR to Auto-Delete video files that are older than a certain amount of days

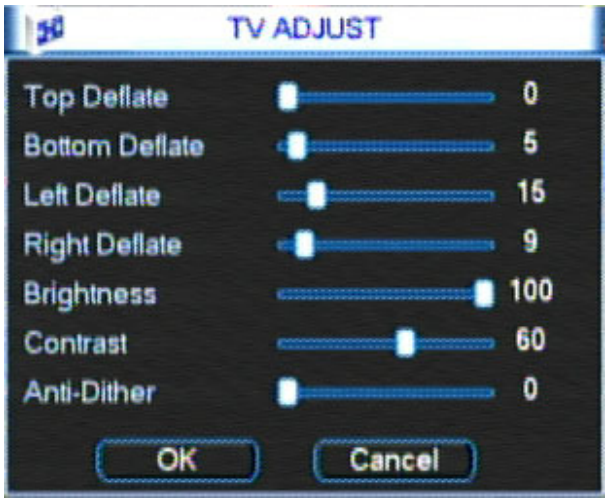
9.7 - TV Adjust

First, log into the DVR as described in 3.1 - Logging into the System menu

Click on

then

to enter the TV Adjust menu



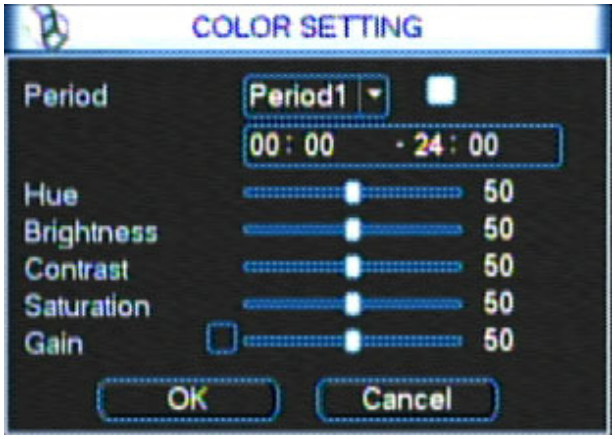
Deflate - Increasing this will increase the amount of padding on the corresponding side, this is especially helpful for when the screen is not centered

Note
You can also see these adjustments in real time if you are using a USB mouse

9.8 - Color Setting

To adjust a channel's individual color setting, full screen the channel, right-click and select "Color Setting". You can also press the "Fn" button on the front panel or IR Remote and select "Color Setting"

This will bring up the Color Setting menu



You can adjust each channel's color setting and make 2 different periods for day/night purposes. You can also adjust the Gain control to boost a weak video signal

CHAPTER 10

Chapter 10 - Troubleshooting

This chapter will cover the remaining menu items and their role in troubleshooting

10.1 - Information Menu

The information menu helps troubleshoot various issues, below is an overview of the functions found within this menu

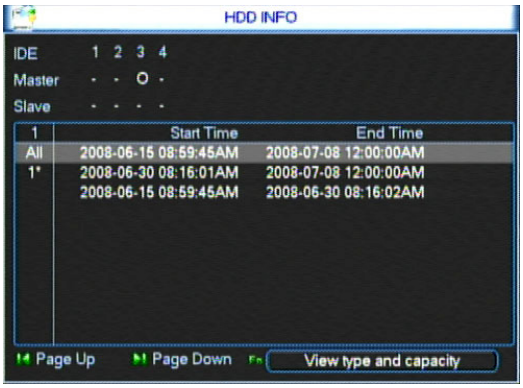
10.1.1 - HDD Info

First, log into the DVR as described in 3.1 - Logging into the System menu

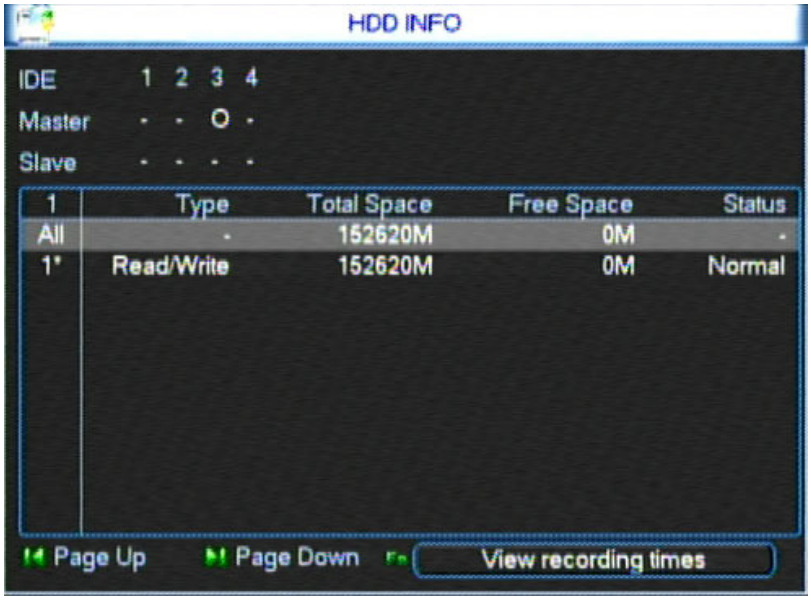
Click on

then

to enter the HDD Info menu



Continued on next page


HDD INFO
IDE 1 2 3 4
Master - - O -
Slave - - - -
1 Type Total Space Free Space Status
All - 152620M 0M -
1* Read/Write 152620M 0M Normal
Page Up
Page Down
View recording times

IDE - Displays the available IDE ports

Master - Lists any drive that is set to master on the corresponding IDE channel with a "O"

Slave - Lists any drive that is set to slave on the corresponding IDE channel

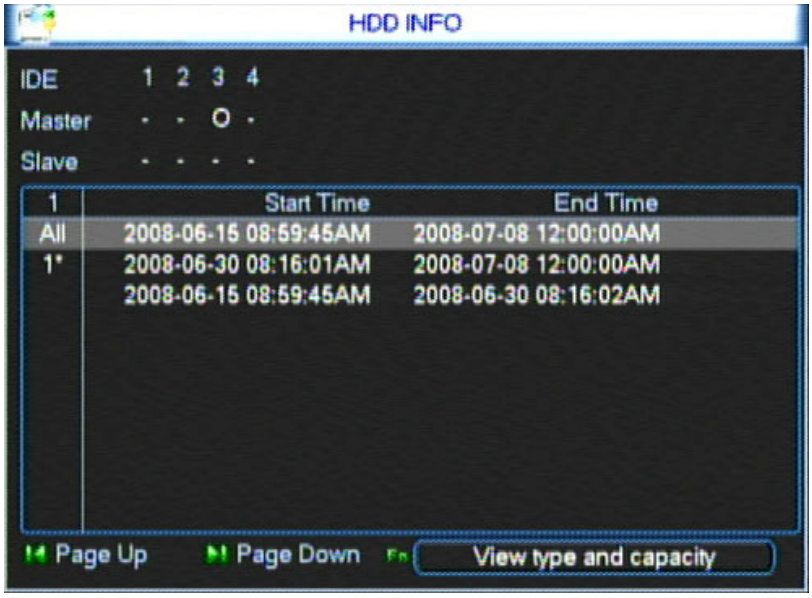
This menu will display total and free space on all drives, along with a detailed analysis of each drive that is installed

Type - The type can be set in the HDD Management menu

Status - Displays the drive status

Troubleshooting (cont'd)

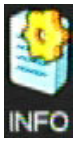
In order to see the available times on the DVR, click View recording times the second page of the HDD Info menu will appear

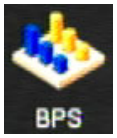


Here you can see the available search times that are on the DVR, with individual times shown per hard drive

10.1.2 - BPS

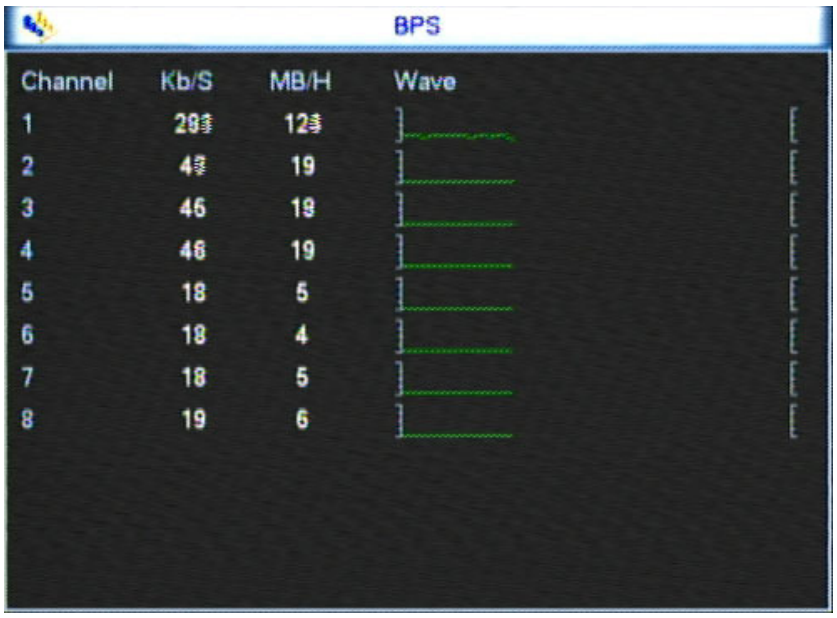
First, log into the DVR as described in 3.1 - Logging into the System menu

Click on 

then 

to enter the BPS menu

Continued on next page



This menu screen displays the speed at which video is being stored on the DVR. The wave will give you a visual representation of this usage

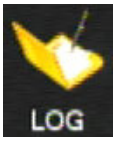
KB/s - Kilobytes per second

MB/H - Megabytes per hour

10.1.3 - System Log

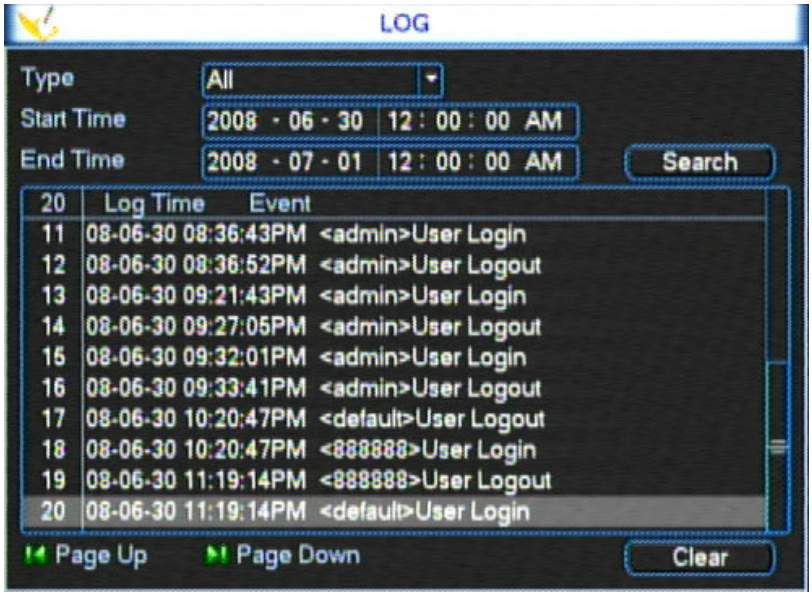
First, log into the DVR as described in 3.1 - Logging into the System menu

Click on

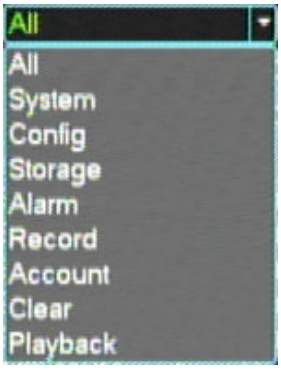
then 

to enter the System Log menu

Troubleshooting (cont'd)



You can view many different things in the log, like what users have logged in to the system, irregular reboots, settings changed etc. You can also sort the events by type and also Clear all events from the system



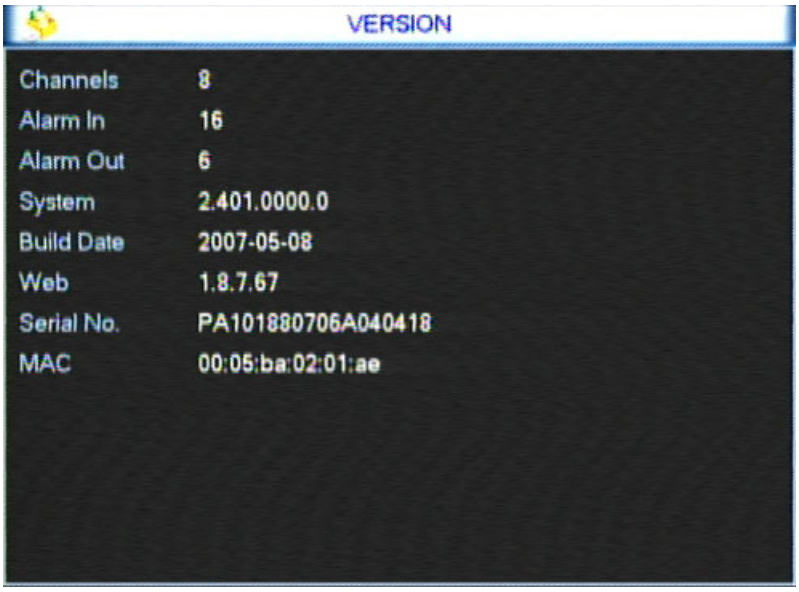
10.1.4 - System Version

First, log into the DVR as described in 3.1 - Logging into the System menu

Click on

then

to enter the System Version menu



Channels - Max amount of channels the system supports

Alarm In - Total available alarm inputs

Alarm Out - Max available alarm outputs

System - Software version currently on the system

Build Date - Date when software was created

Web - Software version for the web interface

Serial No. - DVR's serial information

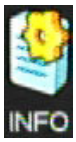
MAC - Physical address of the NIC (Network Interface Card)

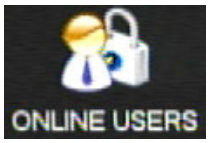
Note

Have your system version ready when contacting technical support to ensure the most efficient troubleshooting

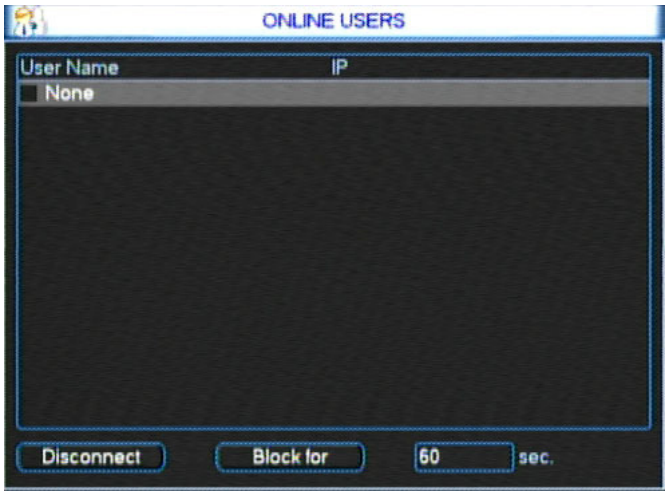
10.1.5 - Online Users

First, log into the DVR as described in 3.1 - Logging into the System menu

Click on 

then 

to enter the System Version menu



Here you can select a connected user and either

the user or

a specified amount of time

FAQs

How do I see my system over the internet?

*See Section 6.2 - Networking 101 (**Page 52**)*

How do I playback video files on the DVR?

*See Chapter 4 - Searching Video (**Page 32**)*

How do I backup recorded video files?

*See Chapter 5 - Backup Video (**Page 38**)*

How can I setup and control a PTZ camera?

*See Chapter 7 - PTZ installation (**Page 78**)*

How can I add or modify users on the system?

*See Section 9.5 - Accounts (**Page 107**)*

How do I playback video files on my PC?

Download the latest version of the player from www.macepro.com

PLEASE NOTE THAT THE INFORMATION IN THIS MANUAL MAY VARY FROM MODEL TO MODEL AND CHANGE WITHOUT NOTICE. FOR FURTHER HELP PLEASE CONTACT TECHNICAL SUPPORT @ 1 (866) 392-MACE